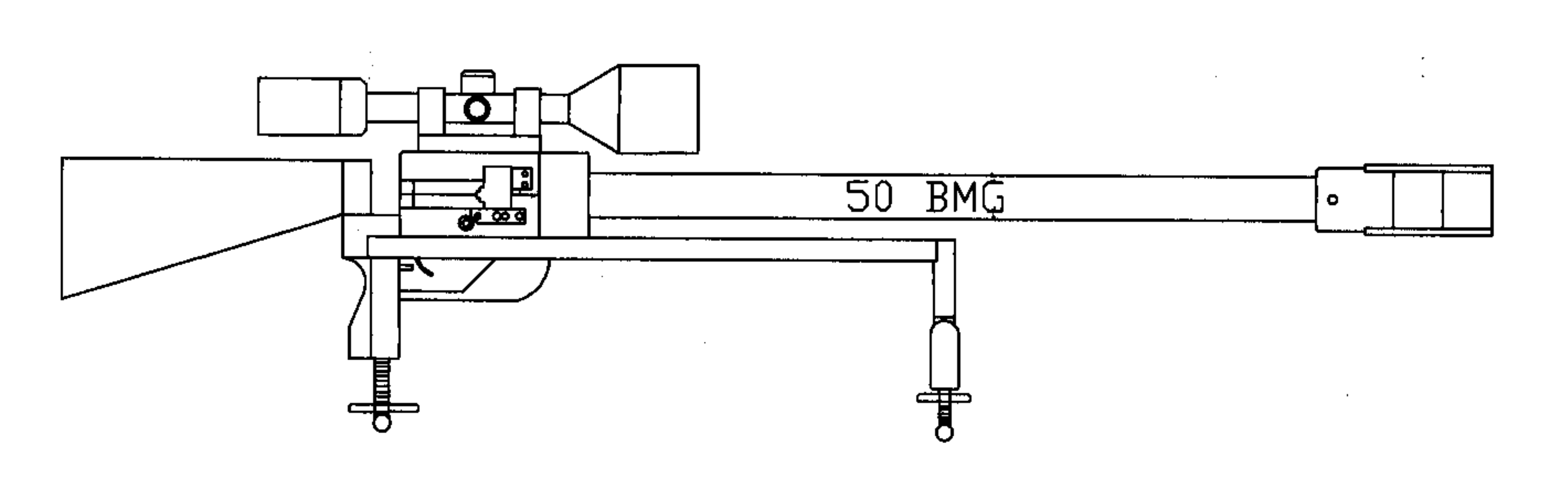
John's 50 Caliber Rifle Plans



www.fiftycaliber.com

USEFUL INFORMATION

* Use centerdrill to start holes to keep more accurate. Drills can walk over.

* Use sharp taps and use tap fluid / oil. Blow out all tapped holes, leaving no oil, or shaving

* All fasteners required removable loc-tite.

* Torque bolts to proper torque.

* Clean bore before shooting.

* When welding muzzle brake, dont use water to cool.

* Check muzzle brake setscrews before shooting. Never shoot without it.

* Use only good quality ammo from someone you can trust.

* When testing, inspect for loose bolts or cracks in reciever.

* Also if Firing Pin is too long, it can punch hole in primer.

If this happen, the muzzle brake is not as effective. Meaning you will get a hard kick.

Keep in mind, if a hole is punched in primer, the force from the shell will try to force out firing pin thru the back of firing block. So make it sure to install hammer stop.

Blue loc-tite the 10-32 screws on hammer stop. This is important part. Don't use any hot Roll, mild steel for any parts. Don't drop reciever or hit with hammer / punch.

AR-15 stock is optional. If you want to cut $40.00 off to your budget, just use the 1" o.d. aluminum rod. And add butt plate and recoil pad. Paint 1" o.d. aluminum black, you can add stock later.

* Review Photos on floppy before beginning to make parts.

Usefull Information

When buying ak-47 parts, buy the import, china stuff, some ak-47 parts are being made in the U.S. The only trouble, is they are harden, and are tough to drill, and tapping is out of the question. The trigger, you can weld a .125 pin, in place ,of an 8-32 setscrew. The pin length would be about .375 long. Its function, is to retain the trigger spring. Without it, the spring would fall out.

Use only good quality fasteners, such as screws, and bolts. Use blue removable loc-tite, on all fasteners. Check all fasteners before shooting. Fasteners could crack, or become loose, check them.

When making parts on firing block page, follow plans exactly. Drill the .157" hole first, to a depth of .860". If you drill, the .077" hole first, it may drift, from it correct location. And always use center drill, and edge finder. The firing pin can be turned down on a lathe, just use proper material. To save time, I used an AR-15 firing pin, and went from there.

All parts should be properly made, and installed properly, before test firing, or shooting. Use 100 yards of fishing line, to test. Sit the rifle, on the ground, tie on your line, and load. I recommend that you be atleast 100 yards away, when firing. Loose parts may fly off with great force. I hope, you have tighten all your fasteners, so this should not happen. Parts such as barrel clamp, hammer stop, muzzle brake, and handle, should always be on rifle, when shooting.

Always check bore before firing, it should be clean of dirt, grease or anything, even cleaning solvents. Do this with rifle unloaded.

When loading, cock hammer completely, completely, is when the trigger catches the hammer. This is the safe way, to cock hammer. If you hold it, you may let go, and rifle could fire. Cock the hammer and then insert the round. Make sure to mill small flats, on hammer cocking shaft, so setscrews will hold. Use removable loc-tite.

Usefull Information

Always lock firing block, when firing. Clearance for firing block is .003", front, or back. Top, or bottom is .005". Use feeler gauge. To check, insert completed firing block, into receiver slot, and dont lock down, when checking clearance. This is not a shooting test, it is to check the clearance, of firing block, and receiver slot.

Barrel clamp, should be mounted straight. This clamp will keep barrel from screwing in or out. This will keep the head space, where it was set. The barrel clamp will help support, the barrel. Another plus of the barrel clamp, is that it will make rifle more rigid.

When making muzzle brake, have welded, by certified welder. And use good quality material. After welding, dont cool with water, this could cause cracking. Drill the .562" hole in proper location, and only when it has cooled. After drill, deburr hole, and check alinment to barrel. Use wooden dowel rod, to check, clearence of hole. Remove dowel after test, is complete.

Bi-pod height, on plans are for a range of 300 yards or so. You may need to make higher, or lower. A different design may be used, just be sure, it will hold up.

Alumnium base is 3.0"wide. And the slot for the trigger, can be half the size. The plans call for a one inch, but a .6" could be used. The trigger, must pivot freely.

If you start with the reciever, I suggest trying this...
Cut two pieces of 1.5 x 3.0 x 5.1 mild steel, cold finish, or other proper steels such as; 4140.4140 is three times stronger, but will cost more and add machining time. I used mild steel. Cut material with cold cutting saw, not friction. Friction sawing tends to heat edges, and can dull tools. Even when you make your muzzle brake don't dip into water to cool it. Don't forget to wear safety glasses even when tapping, they can break too.

After metal is cut and deburred, mill to lenght (5.00) for both pieces. Check for Squareness. Length on plates can vary plus or minus .050" without trouble. Just make both plates the same.

Let get milling with 3/4" rougher endmill. Mill out clearance for firing block, and shell loading area. I did it in 4 or 5 passes, the faster you move this metal the more it will warp. Try to keep it cool as possible. I used flood type coolant, but mist will work. The slot is where the most will occur cause of its depth. After you had rough plates in, use .5 or .625 endmill to get in tolerance. Use slower feeds to get smooth surface, milling marks can start cracks.

Mill clearance for hammer in bottom plate. Only the bottom plate. Hammer cant touch sides, must pivot freely.

Face both plates on the sides that make contact, when bolted together. They must be flat. If you have access to precision grinder, then use it that will be the best.

Next step, will be drilling for the top plate. Drill clearance holes for 3/8 allen bolt. And then, counter bore the same 3 holes that was just drilled. Dowel pinning is done after torque together. Now for the bottom plate, drill the 3 tapped 3/8-16 hole @ 1.0 deep. On the bottom of the bottom plate drill the mounting holes in proper location. Two are 3/8-16 and two are 5/16-18. Tap all holes straight, make sure to remove all burrs and lub.from tapped holes.

Now its time to bolt together. I used blue loc-tite and torqued several times, at different settings. Try to keep flat, like torque of a cylinder head. Be sure to fit firing block, it must move freely. Clearance is on firing block drawing. As far as torque of bolts, torque to proper torque for that size of bolt. With feeler gauge, check clearance of firing block.

Next dowel pinning, use .250 pins. I used two and place them in location, where there was plenty metal around the pins for support, and not by the slot for the firing block. I didn't drill holes anywhere near the slot, not even for scope mounts.

Next, barrel threads, drill, bore and tap threads into bolted together reciever. Making sure its straight, use indicator. Drawings are for BMG hd ground barrel. Other barrels may have problem with head spacing. I used 17/16-8 tpi. I bought tap, and shared the cost with friend. If you rethread the barrel Make ~~amke~~ sure that it is not too thin. I would keep the threads that are already on barrel. A four jaw lathe can be used to thread the reciever.

A 8-32 tap hole is needed on the bottom of the reciever, location is on prints. This hole is for setscrew, that holds spring for trigger.

Left hand plate, shown here.

5.00
0.75 0.25 0.25
0.50
C B A 3.00
D 1.00
1.000 1.000

A-D will indicate thickness, of plates.

A. Thickness is 1.5"
B. Thickness is .5", Mill 1.00" Dp.
C. Thickness is 1.0", Mill .50" Dp.
D. Thickness is 1.5"

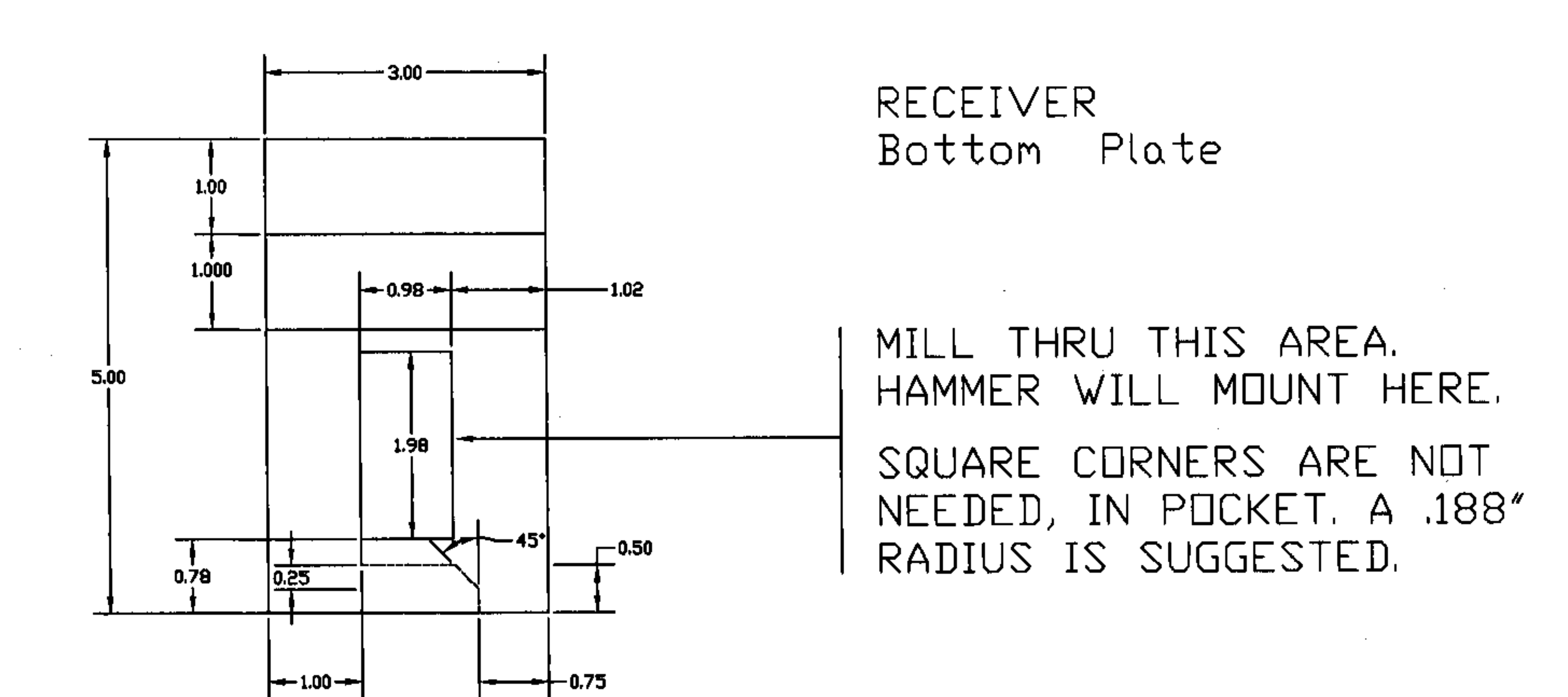
Thickness of A-D,may vary after facing plates flat. As you mill on the plates, warpage will start.

5.00
D 1.00
C B A 3.00
0.75
0.50 1.000 1.000

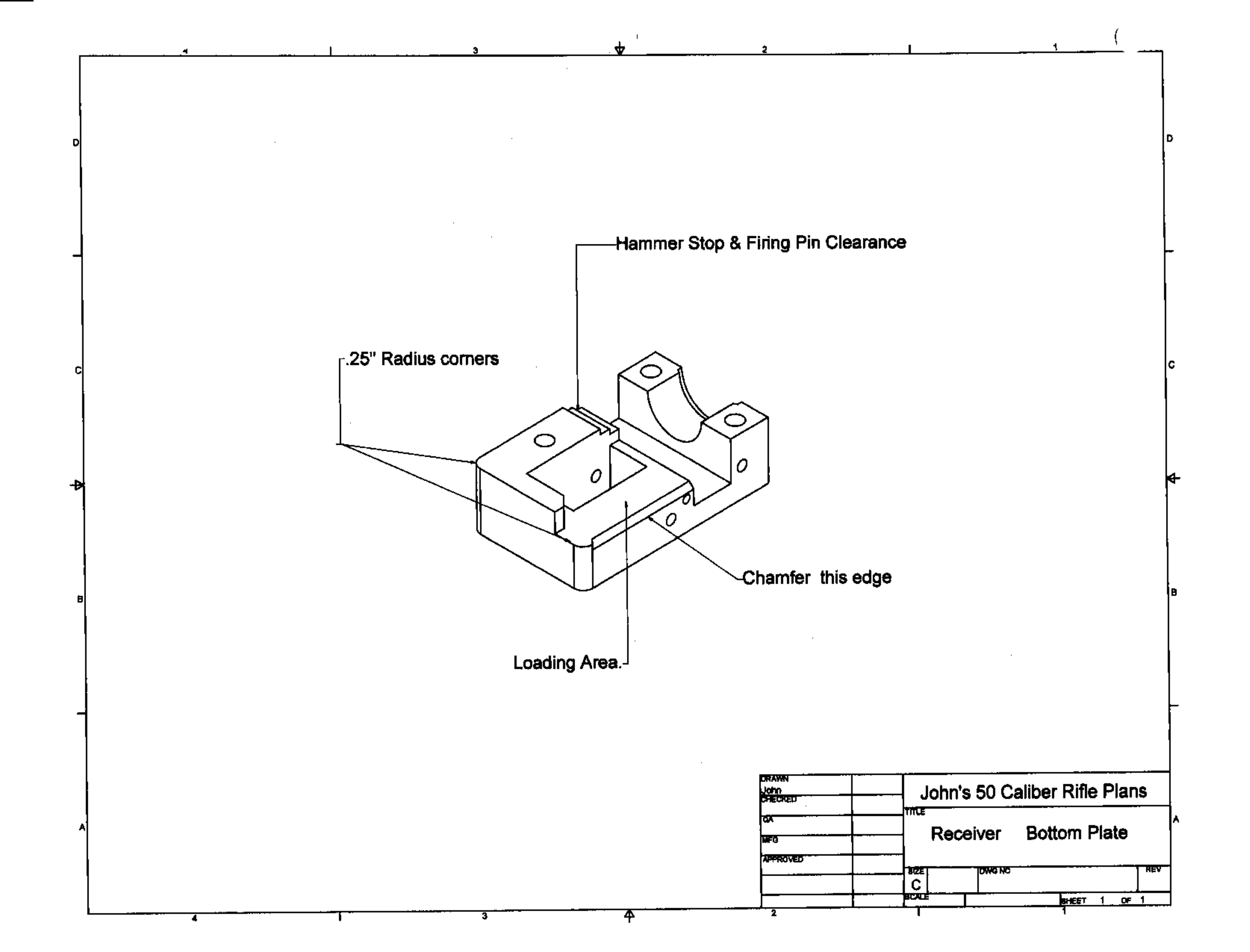
Material size; 1.5"x 3.0"x 5.0"
Two pieces are milled, to complete.
Make a left hand, and a right hand.
The right hand should be the bottom plate.
After milling to size, face both plates, flat.
Remove only what is needed, to obtain flatness.

Right hand plate, shown here.

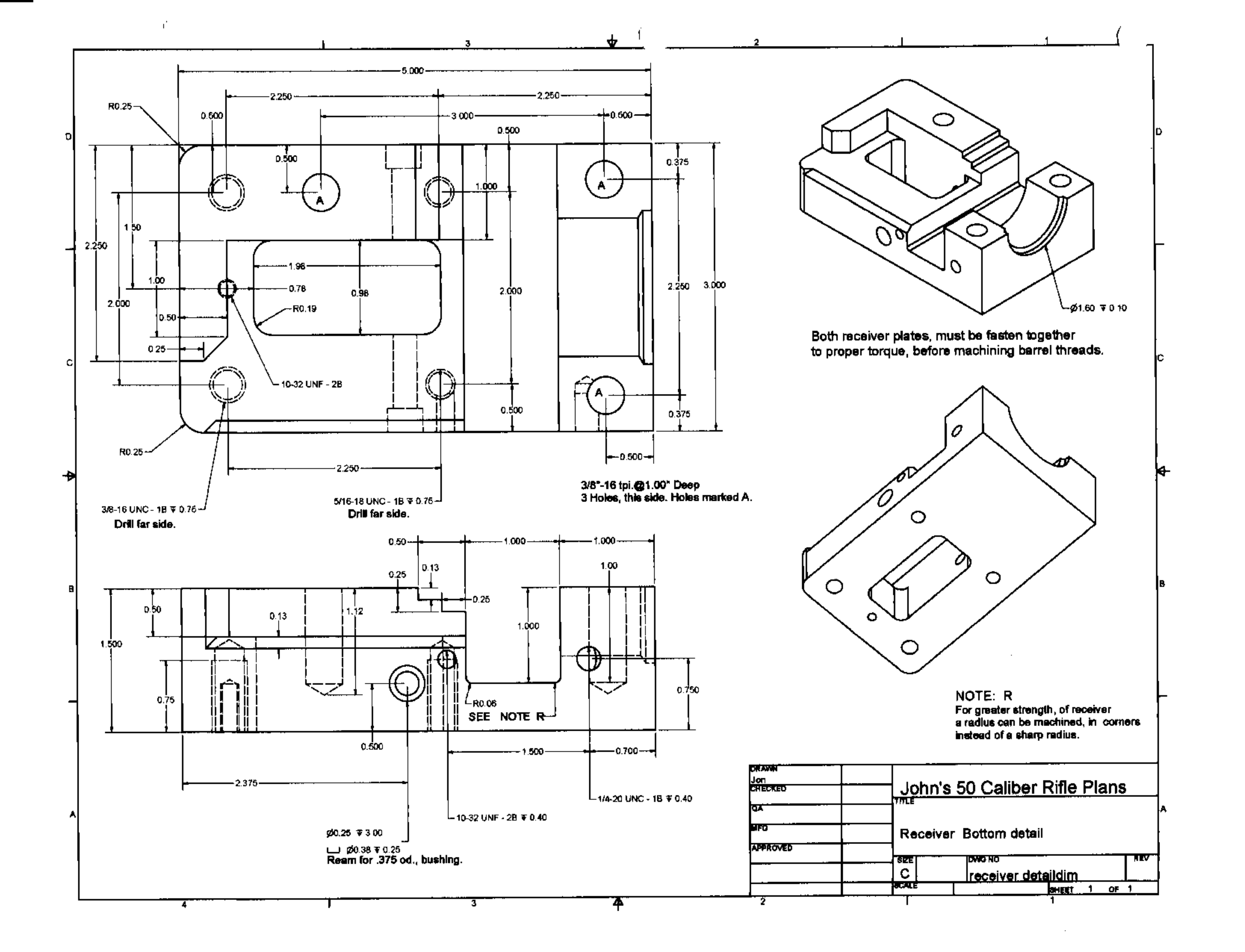
DRAWN John	John's 50 Caliber Rifle Plans
CHECKED	TITLE Receiver Plates
QA	SIZE C
MFG	DWG NO
APPROVED	REV
	SCALE
	SHEET 1 OF 1



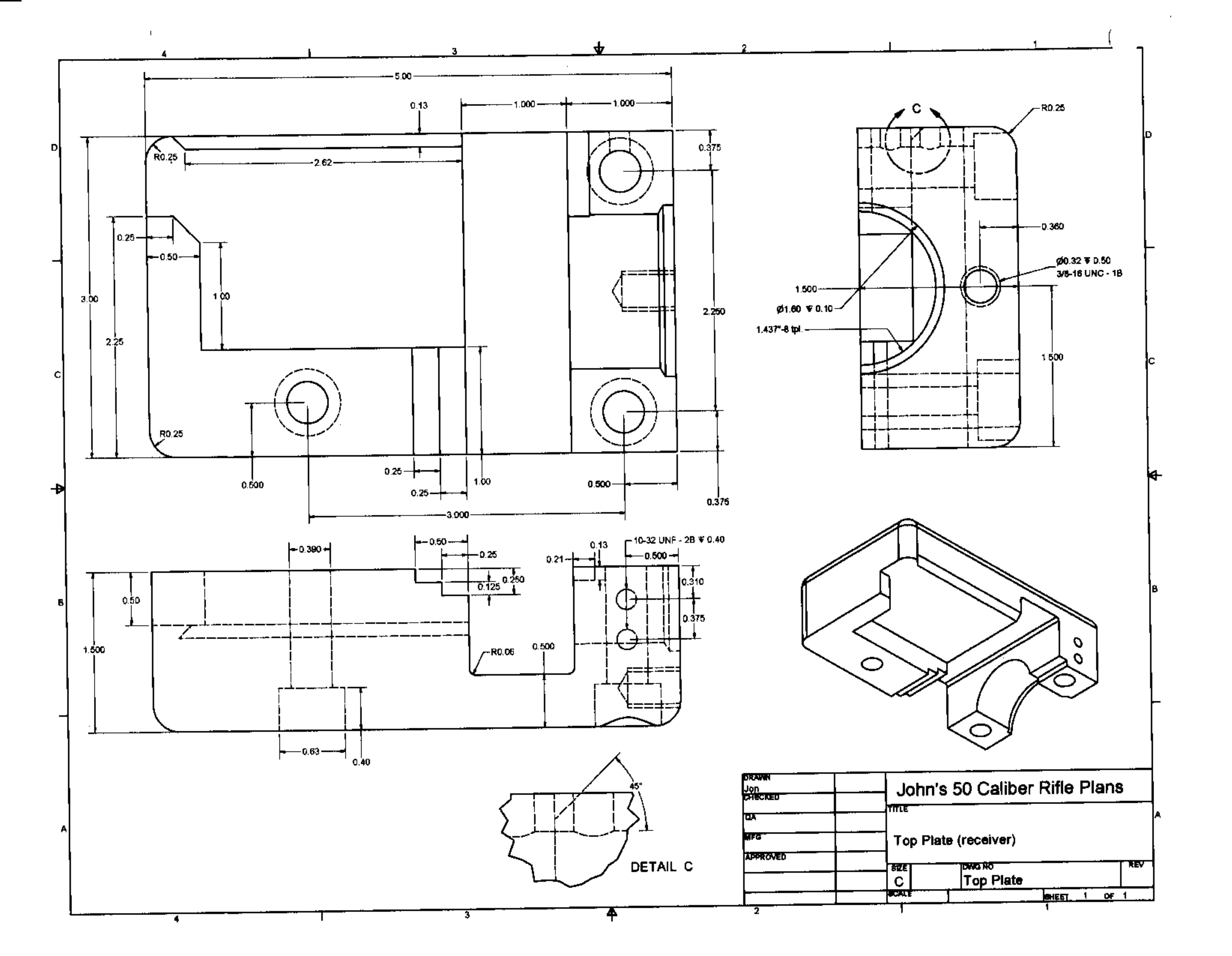
3.00
1.00
1.000
0.98
1.02
5.00
1.98
45°
0.50
0.78
0.25
1.00
0.75
RECEIVER
Bottom Plate
MILL THRU THIS AREA.
HAMMER WILL MOUNT HERE.
SQUARE CORNERS ARE NOT
NEEDED, IN POCKET. A .188"
RADIUS IS SUGGESTED.



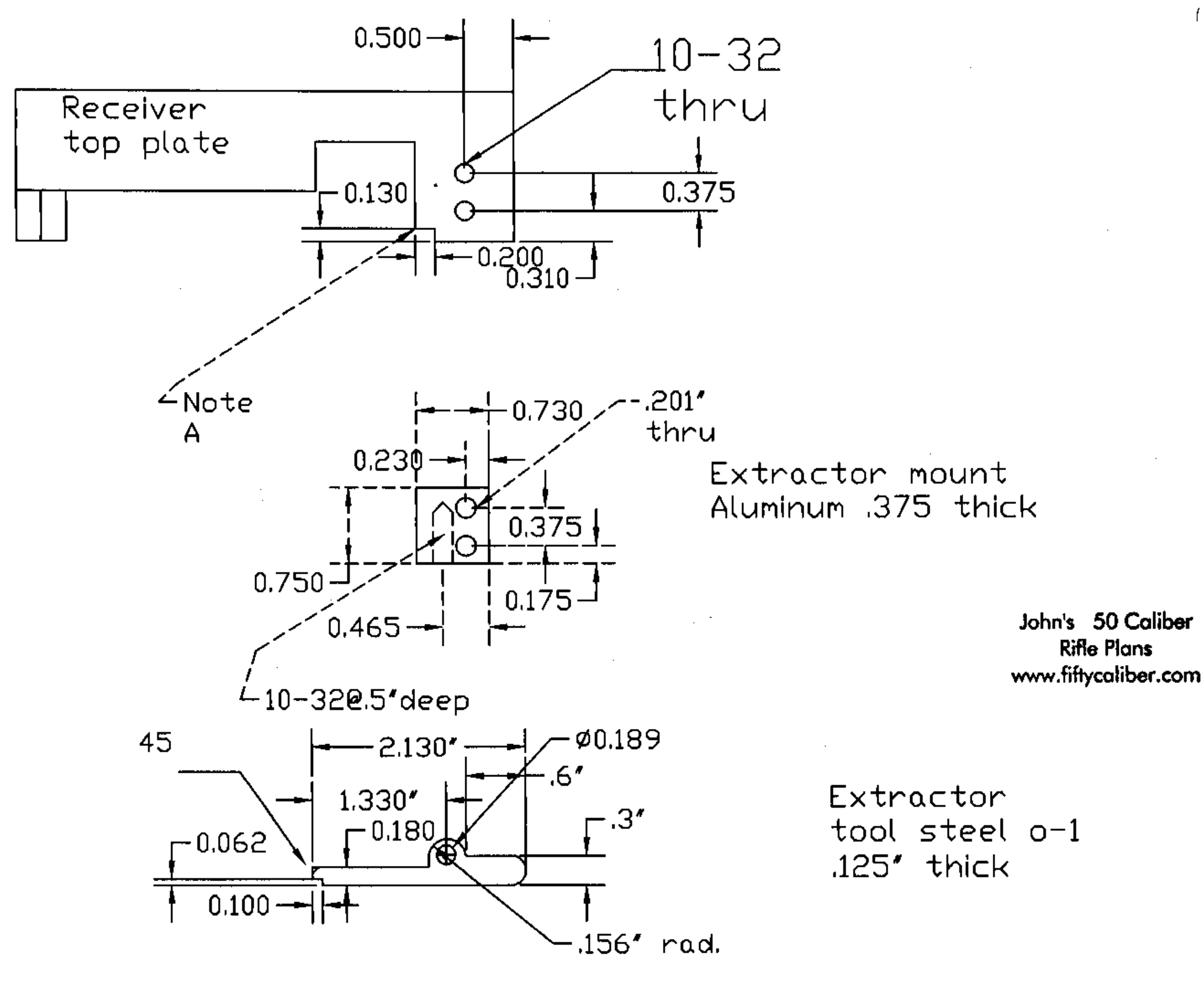
Hammer Stop & Firing Pin Clearance
.25" Radius corners
Chamfer this edge
Loading Area.
DRAWN
John
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Receiver Bottom Plate
SIZE
C
DWG NO
REV
SCALE
SHEET 1 OF 1



5.000
2.250
2.250
R0.25
0.600
3.000
0.600
0.500
0.500
1.000
0.375
1.50
2.250
1.98
1.00
0.78
0.98
2.000
2.250
3.000
2.000
R0.19
0.50
0.25
10-32 UNF - 2B
0.500
0.375
R0.25
0.500
2.250
3/8-16 UNC - 1B ⊽ 0.76
Drill far side.
5/16-18 UNC - 1B ⊽ 0.75
Drill far side.
3/8"-16 tpi.@1.00" Deep
3 Holes, this side. Holes marked A.
Ø1.60 ⊽ 0.10
Both receiver plates, must be fasten together
to proper torque, before machining barrel threads.
0.50
1.000
1.000
0.13
0.25
1.00
0.25
0.50
0.13
1.12
1.000
1.500
0.75
0.750
R0.06
SEE NOTE R
0.500
1.500
0.700
2.375
1/4-20 UNC - 1B ⊽ 0.40
10-32 UNF - 2B ⊽ 0.40
Ø0.25 ⊽ 3.00
⌴ Ø0.38 ⊽ 0.25
Ream for .375 od., bushing.
NOTE: R
For greater strength, of receiver
a radius can be machined, in corners
instead of a sharp radius.
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Receiver Bottom detail
SIZE
C
DWG NO
receiver detaildim
REV
SCALE
SHEET 1 OF 1

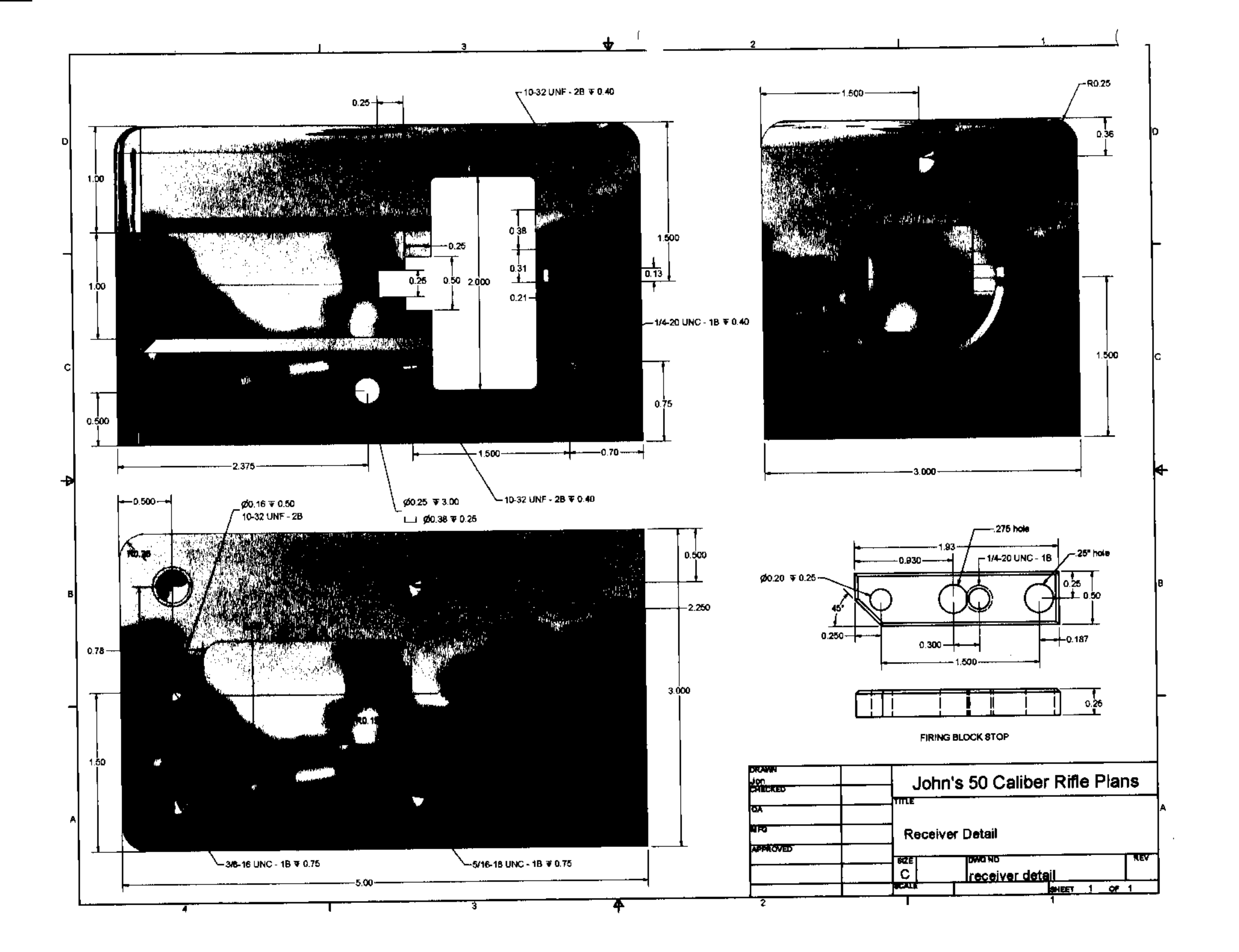


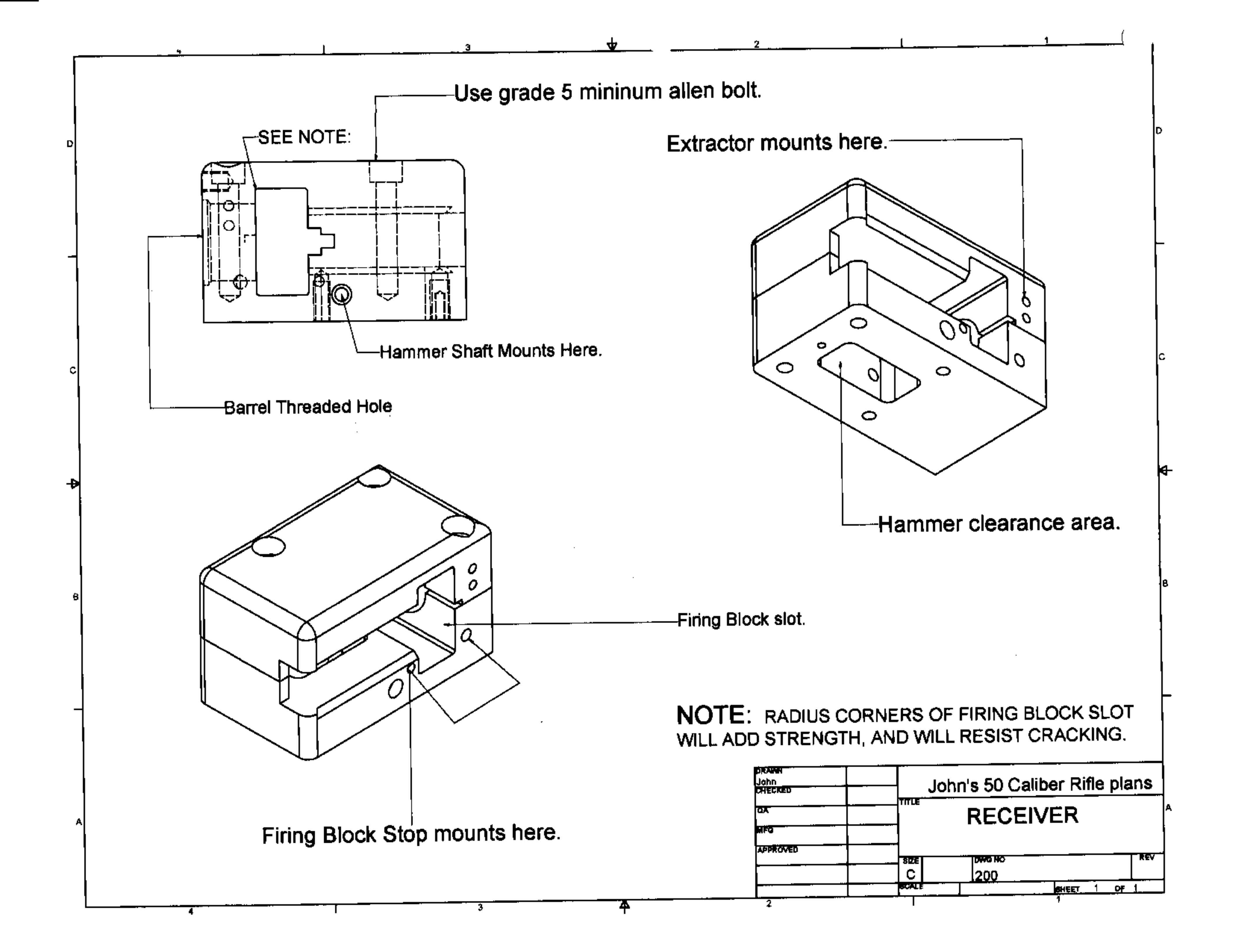
John's 50 Caliber Rifle Plans
TITLE
Top Plate (receiver)
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
SIZE
C
DWG NO
Top Plate
REV
SCALE
SHEET 1 OF 1
DETAIL C
45°
R0.25
0.360
Ø0.32 ↧ D.50
3/8-16 UNC - 1B
1.500
Ø1.60 ↧ 0.10
1.437"-8 tpi
5.00
0.13
1.000
1.000
0.375
2.62
0.25
0.50
1.00
3.00
2.25
2.250
R0.25
0.500
0.25
0.25
1.00
0.500
0.376
3.000
0.390
0.50
0.25
0.250
0.125
0.21
0.13
10-32 UNF - 2B ↧ 0.40
0.500
0.310
0.375
R0.06
0.500
1.500
0.63
0.40



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Rifle Plans
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Note A; Mill metal off,for extractor clearance
to center of receiver.
Top plate only.

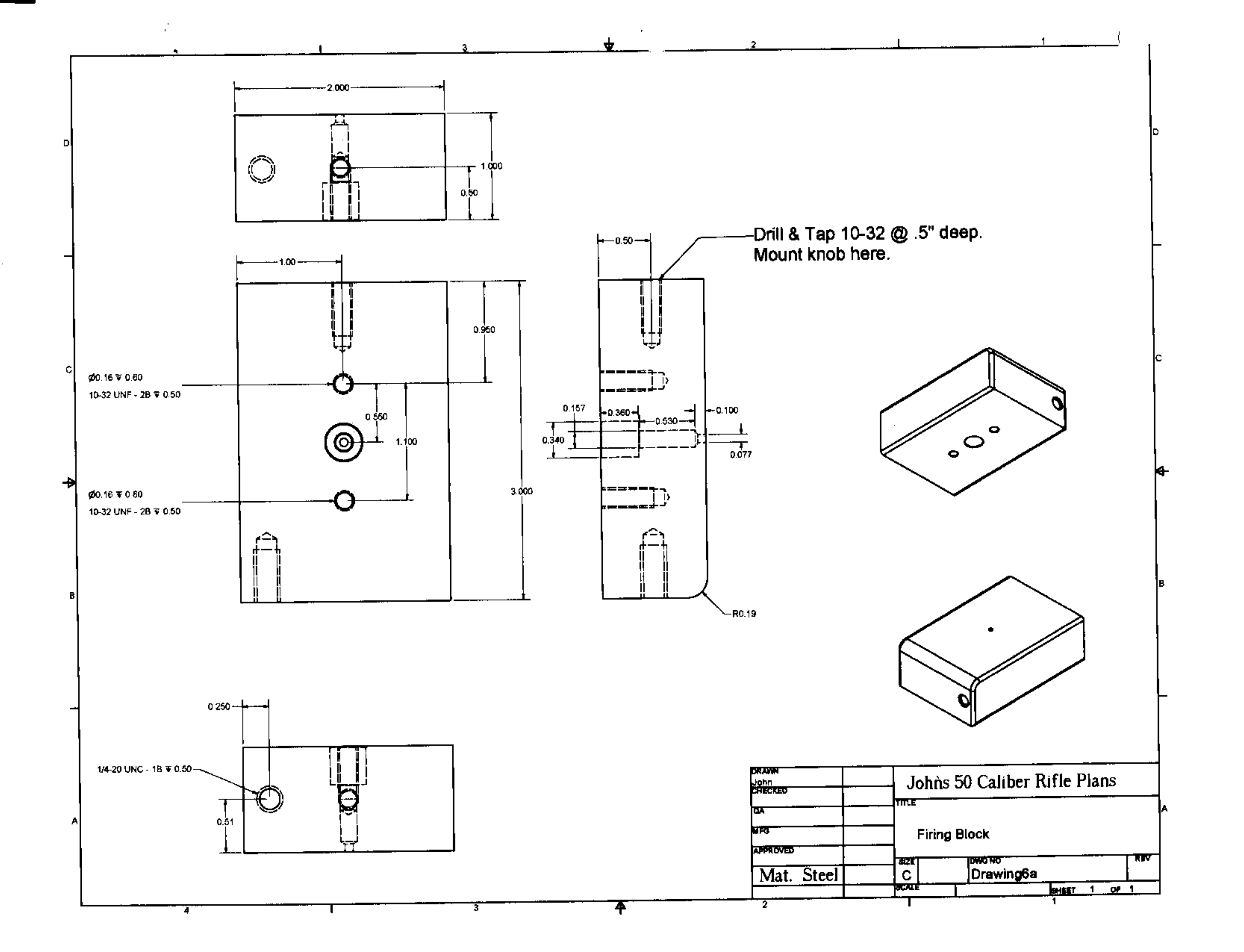

10-32 UNF - 2B ↧ 0.40
0.25
1.00
1.00
0.500
0.38
0.31
0.21
0.25
0.25
0.50
2.000
1.500
0.13
1/4-20 UNC - 1B ↧ 0.40
0.75
2.375
1.500
0.70
⌀0.25 ↧ 3.00
⌴ ⌀0.38 ↧ 0.25
10-32 UNF - 2B ↧ 0.40
R0.25
1.500
0.36
1.500
3.000
0.500
⌀0.16 ↧ 0.50
10-32 UNF - 2B
0.500
2.250
3.000
0.78
1.50
3/8-16 UNC - 1B ↧ 0.75
5/16-18 UNC - 1B ↧ 0.75
5.00
.275 hole
1.93
0.930
1/4-20 UNC - 1B
.25" hole
⌀0.20 ↧ 0.25
0.25
0.50
45°
0.250
0.300
0.187
1.500
0.26
FIRING BLOCK STOP
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Receiver Detail
SIZE
C
DWG NO
receiver detail
REV
SCALE
SHEET 1 OF 1


Use grade 5 mininum allen bolt.
SEE NOTE:
Extractor mounts here.
Hammer Shaft Mounts Here.
Barrel Threaded Hole
Hammer clearance area.
Firing Block slot.
Firing Block Stop mounts here.
NOTE: RADIUS CORNERS OF FIRING BLOCK SLOT WILL ADD STRENGTH, AND WILL RESIST CRACKING.
DRAWN
John
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle plans
TITLE
RECEIVER
SIZE
C
DWG NO
200
REV
SCALE
SHEET 1 OF 1

FIRING
BLOCK

HAMMER
STOP

FIRING
PIN


2.000
1.000
0.50
1.00
0.950
3.000
ø0.16 ↧ 0.60
10-32 UNF - 2B ↧ 0.50
0.550
1.100
ø0.16 ↧ 0.60
10-32 UNF - 2B ↧ 0.50
0.50
Drill & Tap 10-32 @ .5" deep.
Mount knob here.
0.157
0.360
0.530
0.100
0.340
0.077
R0.19
0.250
1/4-20 UNC - 1B ↧ 0.50
0.51
DRAWN
John
CHECKED
QA
MFG
APPROVED
Mat. Steel
Johns 50 Caliber Rifle Plans
TITLE
Firing Block
SIZE
C
DWG NO
Drawing6a
REV
SCALE
SHEET 1 OF 1

HAMMER STOP
.25x.5x1.55
steel

C.sink for 10-32
flat head screw

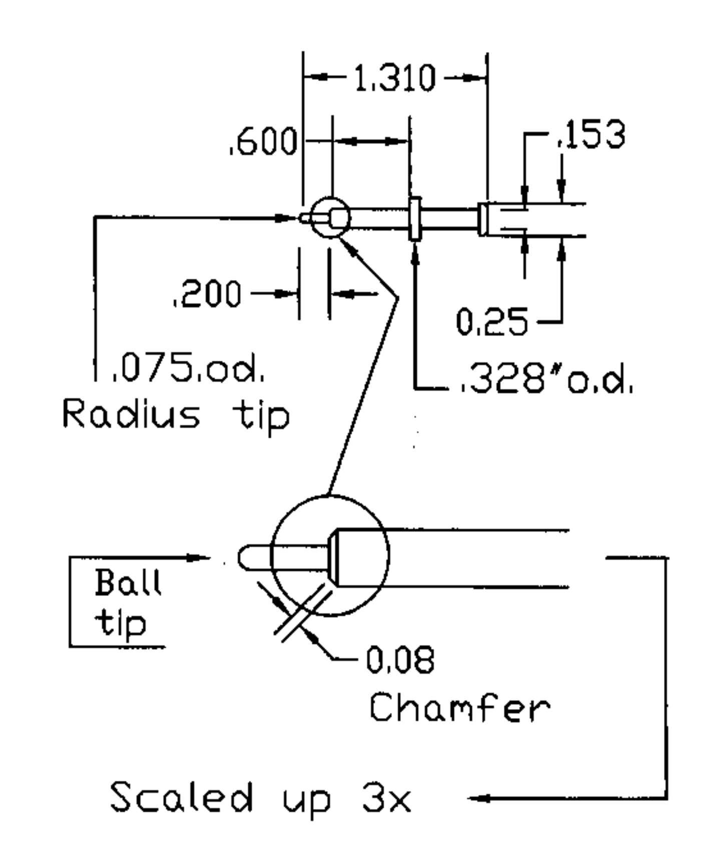
ø0.34
ø0.19
0.55
1.55
1.10
ø0.26
0.50

FIRING PIN
MADE FROM AR-15

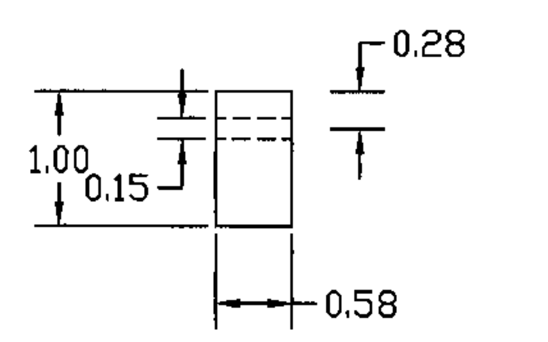
1.310
.600
.153
.200
0.25
.075.od.
Radius tip
.328"o.d.

0.08
Chamfer

FIRING PIN
MADE FROM AR-15



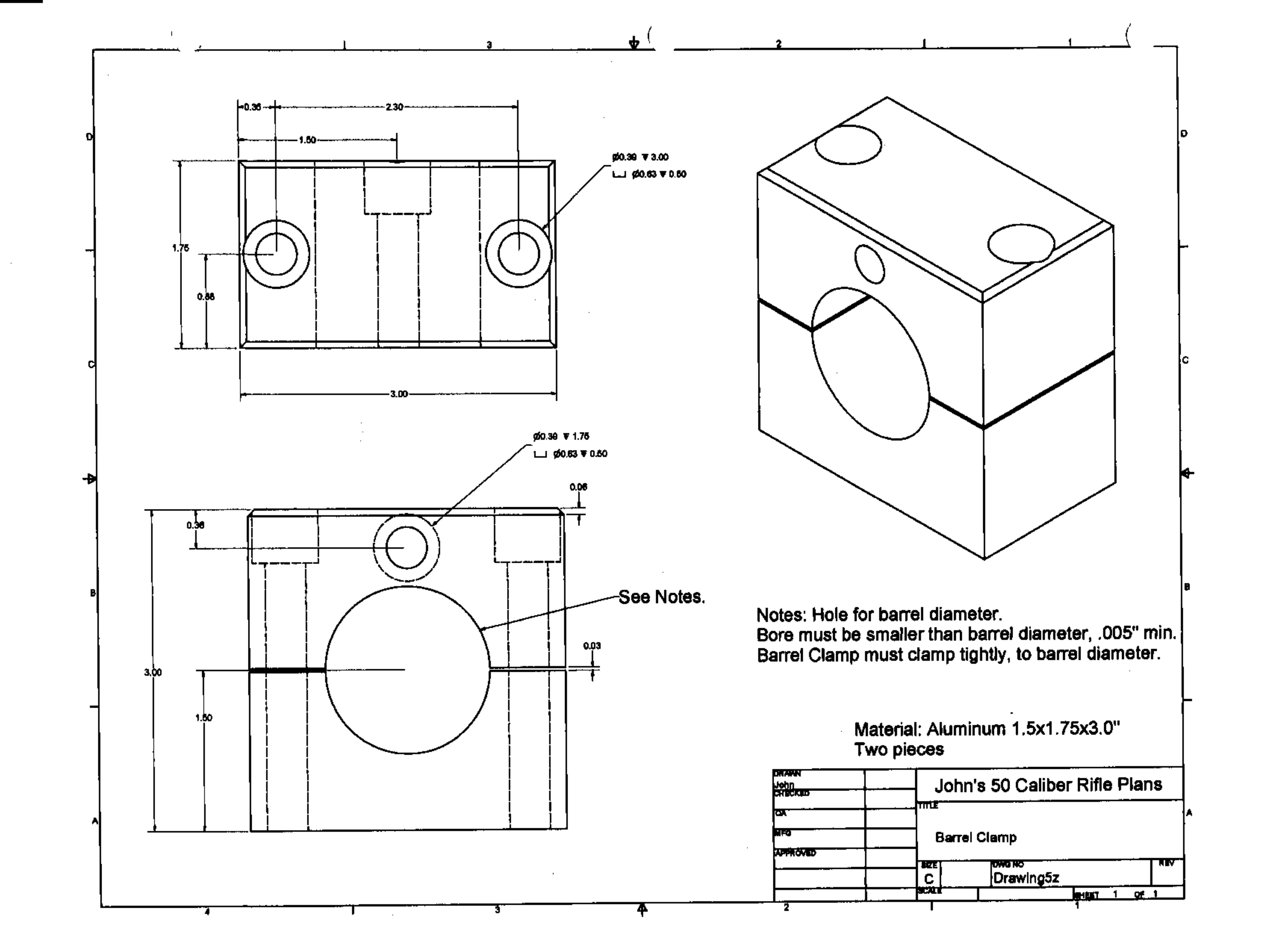
If using a precision grinder make the following fixture.



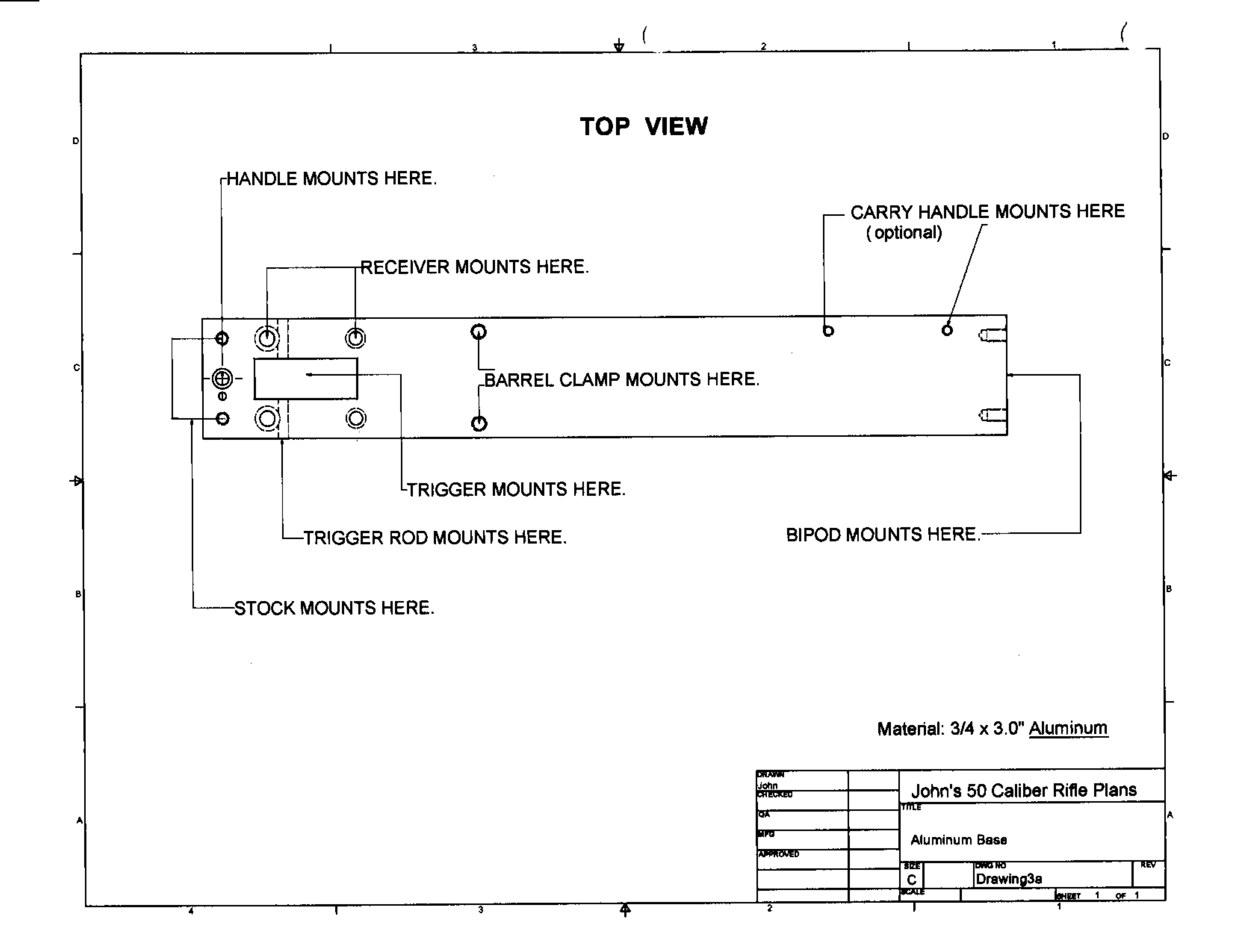
Use mild steel 2 or 3 inches long. Make sure bottom is flat.

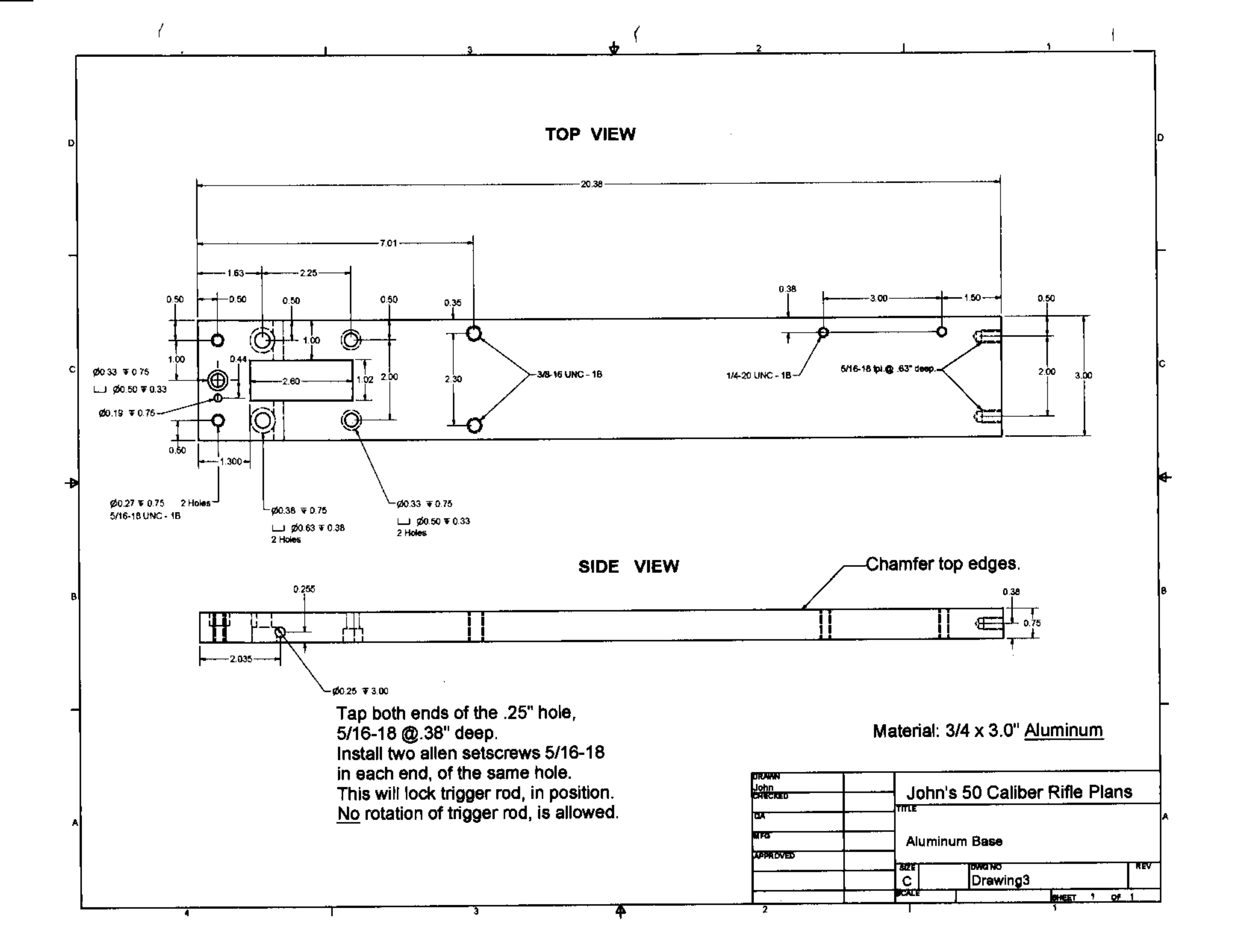
Firing pin can be rotated by hand, as other hand turns handle to lower grinding wheel.

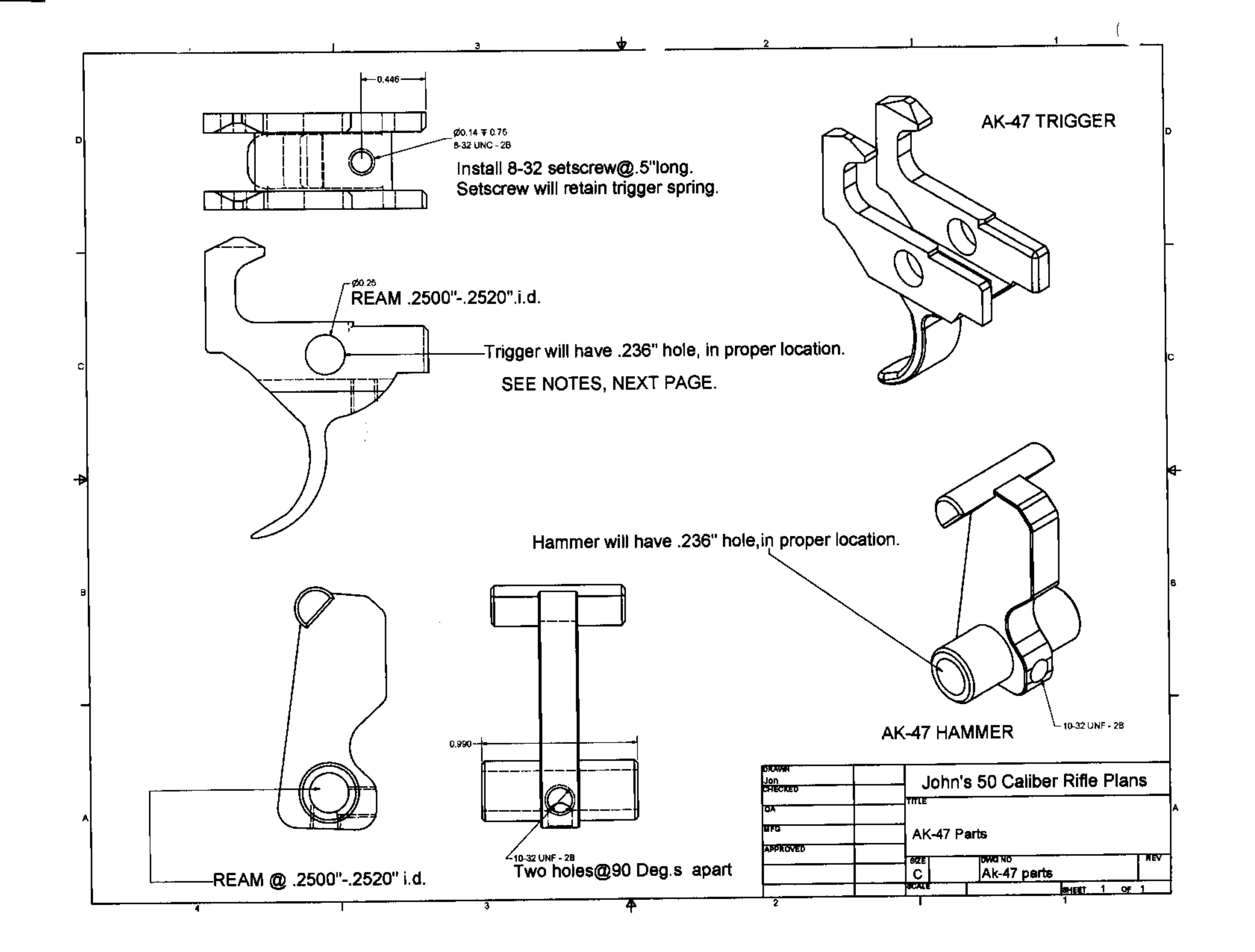
Turn both slowly.



0.36
2.30
1.50
1.75
0.88
3.00
ø0.39 ▼ 3.00
⌴ ø0.63 ▼ 0.50
ø0.39 ▼ 1.75
⌴ ø0.63 ▼ 0.50
0.06
0.36
See Notes.
0.03
3.00
1.50
Notes: Hole for barrel diameter.
Bore must be smaller than barrel diameter, .005" min.
Barrel Clamp must clamp tightly, to barrel diameter.
Material: Aluminum 1.5x1.75x3.0"
Two pieces
DRAWN
John
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Barrel Clamp
SIZE
C
DWG NO
Drawing5z
REV
SCALE
SHEET 1 OF 1


TOP VIEW
HANDLE MOUNTS HERE.
CARRY HANDLE MOUNTS HERE
(optional)
RECEIVER MOUNTS HERE.
BARREL CLAMP MOUNTS HERE.
TRIGGER MOUNTS HERE.
TRIGGER ROD MOUNTS HERE.
BIPOD MOUNTS HERE.
STOCK MOUNTS HERE.
Material: 3/4 x 3.0" Aluminum
DRAWN
John
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Aluminum Base
SIZE
C
DWG NO
Drawing3a
REV
SCALE
SHEET 1 OF 1


TOP VIEW
20.38
7.01
1.63
2.25
0.50
0.50
0.50
0.50
0.35
0.38
3.00
1.50
0.50
1.00
1.00
0.44
2.60
1.02
2.00
2.30
2.00
3.00
3/8-16 UNC - 1B
1/4-20 UNC - 1B
5/16-18 tpi @ .63" deep.
ø0.33 ⌵ 0.75
⌴ ø0.50 ⌵ 0.33
ø0.19 ⌵ 0.76
0.50
1.300
ø0.27 ⌵ 0.75 2 Holes
5/16-18 UNC - 1B
ø0.38 ⌵ 0.75
⌴ ø0.63 ⌵ 0.38
2 Holes
ø0.33 ⌵ 0.75
⌴ ø0.50 ⌵ 0.33
2 Holes
SIDE VIEW
Chamfer top edges.
0.255
0.38
0.75
2.035
ø0.25 ⌵ 3.00
Tap both ends of the .25" hole,
5/16-18 @.38" deep.
Install two allen setscrews 5/16-18
in each end, of the same hole.
This will lock trigger rod, in position.
No rotation of trigger rod, is allowed.
Material: 3/4 x 3.0" Aluminum
DRAWN
John
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
Aluminum Base
SIZE
C
DWG NO
Drawing3
REV
SCALE
SHEET 1 OF 1


AK-47 TRIGGER
0.446
Ø0.14 ⧮ 0.75
8-32 UNC - 2B
Install 8-32 setscrew@.5"long.
Setscrew will retain trigger spring.
Ø0.25
REAM .2500"-.2520".i.d.
Trigger will have .236" hole, in proper location.
SEE NOTES, NEXT PAGE.
Hammer will have .236" hole,in proper location.
10-32 UNF - 2B
AK-47 HAMMER
0.990
10-32 UNF - 2B
Two holes@90 Deg.s apart
REAM @ .2500"-.2520" i.d.
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
AK-47 Parts
SIZE
C
DWG NO
Ak-47 parts
REV
SCALE
SHEET 1 OF 1

MODIFING PARTS

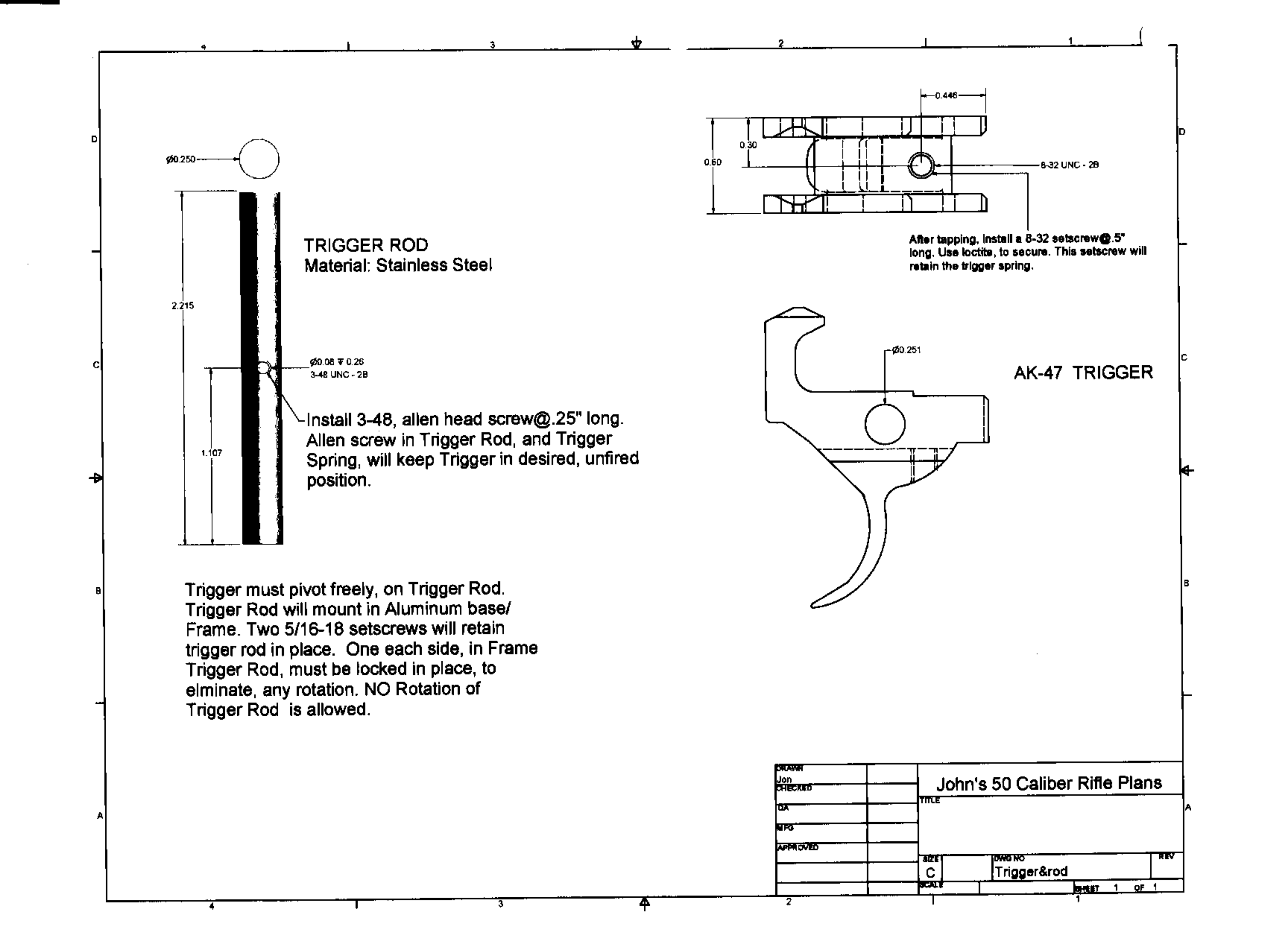
The AK-47 Trigger : the pivot hole in it is 6mm. Drill it out to .25 id thru both sides. Next grind or belt sand off 1 ear if you like this will make for smoother trigger.

A 8-32 thread hole located in rear, this will hold in trigger spring. Lock-tite in with removable, trigger is now finish. Trigger is mounted in Rail.

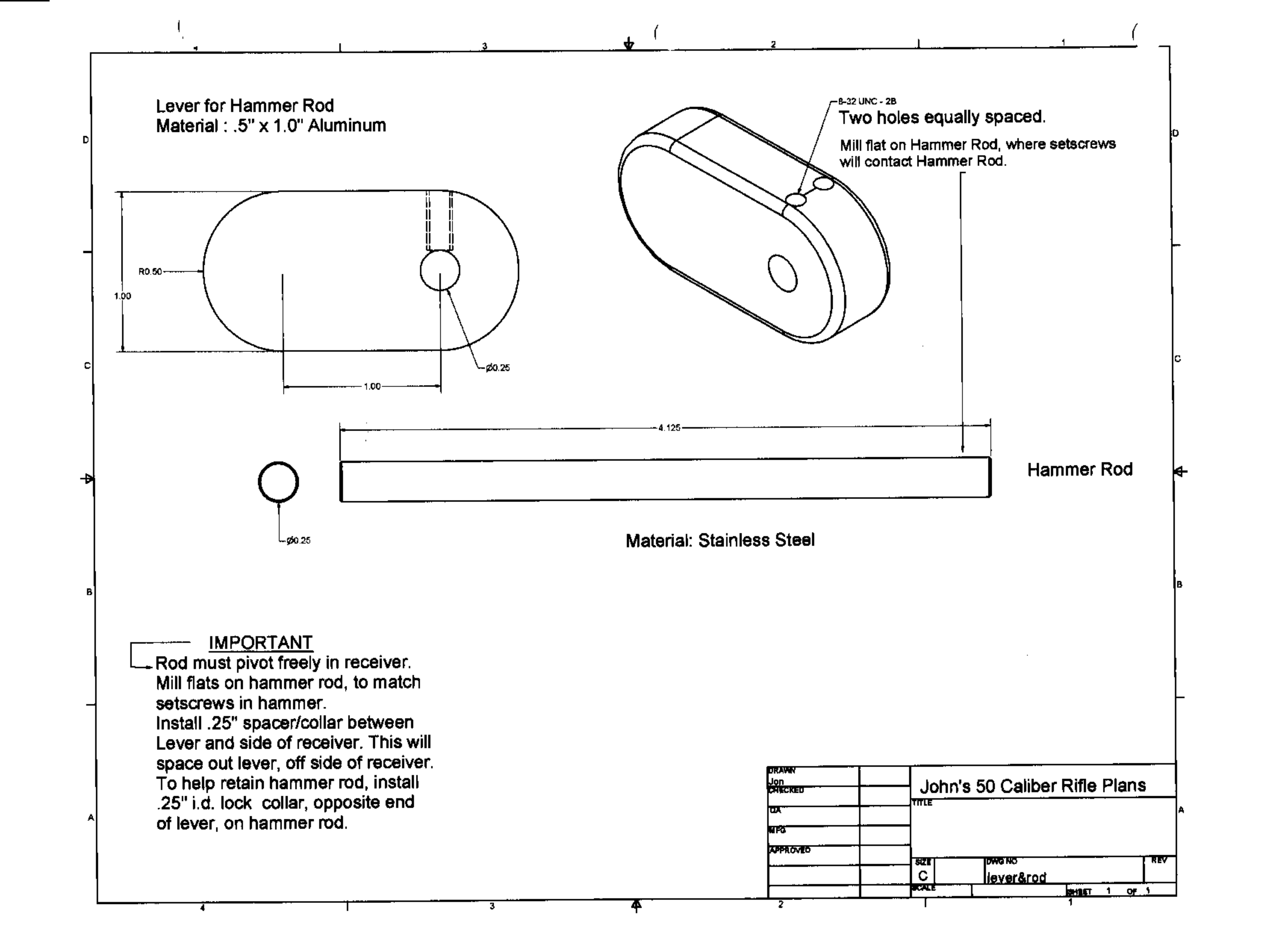
The trigger shaft is 2.215" long. I used 1/4" stainless steel, mild steel is fine. A 3-48 tap hole is put in center. A allen screw is loc-tited here. Note this screw keeps the trigger in the right location, in the unfired position. The spring pushes the trigger up, and this allen screw (3-48) stops the upward movement.

The 5/16" setscrews, 2 of them in the aluminum base pushes against the trigger rod, holds it in place and stop it from rotating.

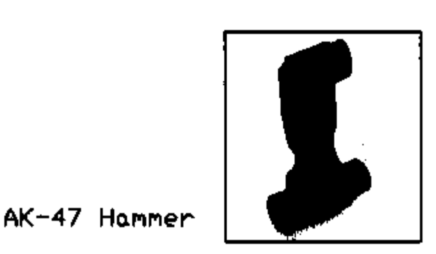
Really tighten the 5/16 setscrew tight with loc-tite. If the Rod, rotate while loaded the gun should not fire. It just will not cock the hammer. This is really easy to understand the trigger system.



Ø0.250
2.215
1.107
Ø0.08 ⧰ 0.26
3-48 UNC - 2B
TRIGGER ROD
Material: Stainless Steel
Install 3-48, allen head screw@.25" long. Allen screw in Trigger Rod, and Trigger Spring, will keep Trigger in desired, unfired position.
Trigger must pivot freely, on Trigger Rod. Trigger Rod will mount in Aluminum base/ Frame. Two 5/16-18 setscrews will retain trigger rod in place. One each side, in Frame Trigger Rod, must be locked in place, to elminate, any rotation. NO Rotation of Trigger Rod is allowed.
0.446
0.30
0.60
8-32 UNC - 2B
After tapping, install a 8-32 setscrew@.5" long. Use loctite, to secure. This setscrew will retain the trigger spring.
Ø0.251
AK-47 TRIGGER
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
SIZE
C
DWG NO
Trigger&rod
REV
SCALE
SHEET 1 OF 1

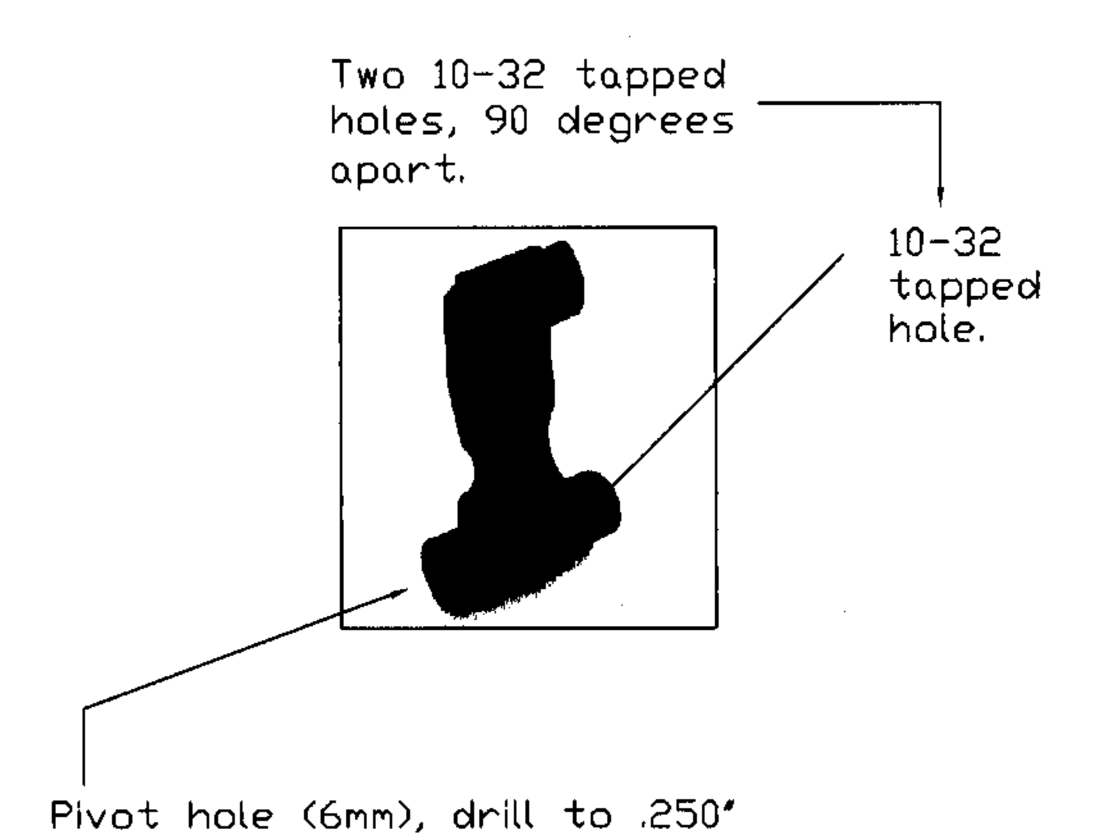

Lever for Hammer Rod
Material : .5" x 1.0" Aluminum
R0.50
1.00
1.00
ø0.25
8-32 UNC - 2B
Two holes equally spaced.
Mill flat on Hammer Rod, where setscrews will contact Hammer Rod.
4.125
Hammer Rod
ø0.25
Material: Stainless Steel
IMPORTANT
Rod must pivot freely in receiver.
Mill flats on hammer rod, to match setscrews in hammer.
Install .25" spacer/collar between Lever and side of receiver. This will space out lever, off side of receiver.
To help retain hammer rod, install .25" i.d. lock collar, opposite end of lever, on hammer rod.
DRAWN
Jon
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QA
MFG
APPROVED
John's 50 Caliber Rifle Plans
TITLE
SIZE
C
DWG NO
lever&rod
REV
SCALE
SHEET 1 OF 1

John's 50 Caliber Rifle Plans



AK-47 Hammer

Steps to completing hammer.
Drill 6mm pivot hole to .250 inches. Drill & Tap two 10-32 holes, into main body of hammer.The two holes will be drilled thru to the pivot hole. Two set-screws will used here to lock hammer to hammer shaft. Mill two small flats on hammer shaft to match setscrews in hammer. Mill flats .030" deep.



MODIFING HAMMER

Make sure not to buy American made they're to hard to drill. Get Import. Hammer comes with 6mm hole, drill out to .25 i.d. to fit your .25" rod. (Hammer Rod, which is 4.10" oal) drill and tap (2) 10-32 holes thru to the .25 hole, this will let you lock the hammer to the hammer rod. Mill small flats, so that the setscrew in the hammer will help lock hammer to shaft. The hammer rod is just cut to lenght, and flats for setscrews. The hammer will need to be milled to fit in the slot of the reciever. Make sure the hammer spring is correctly installed, it will only work one way. The hammer will only work one way. Most people install the hammer wrong. The ears on hammer are away from hitting firng pin. Use pictures for reference.

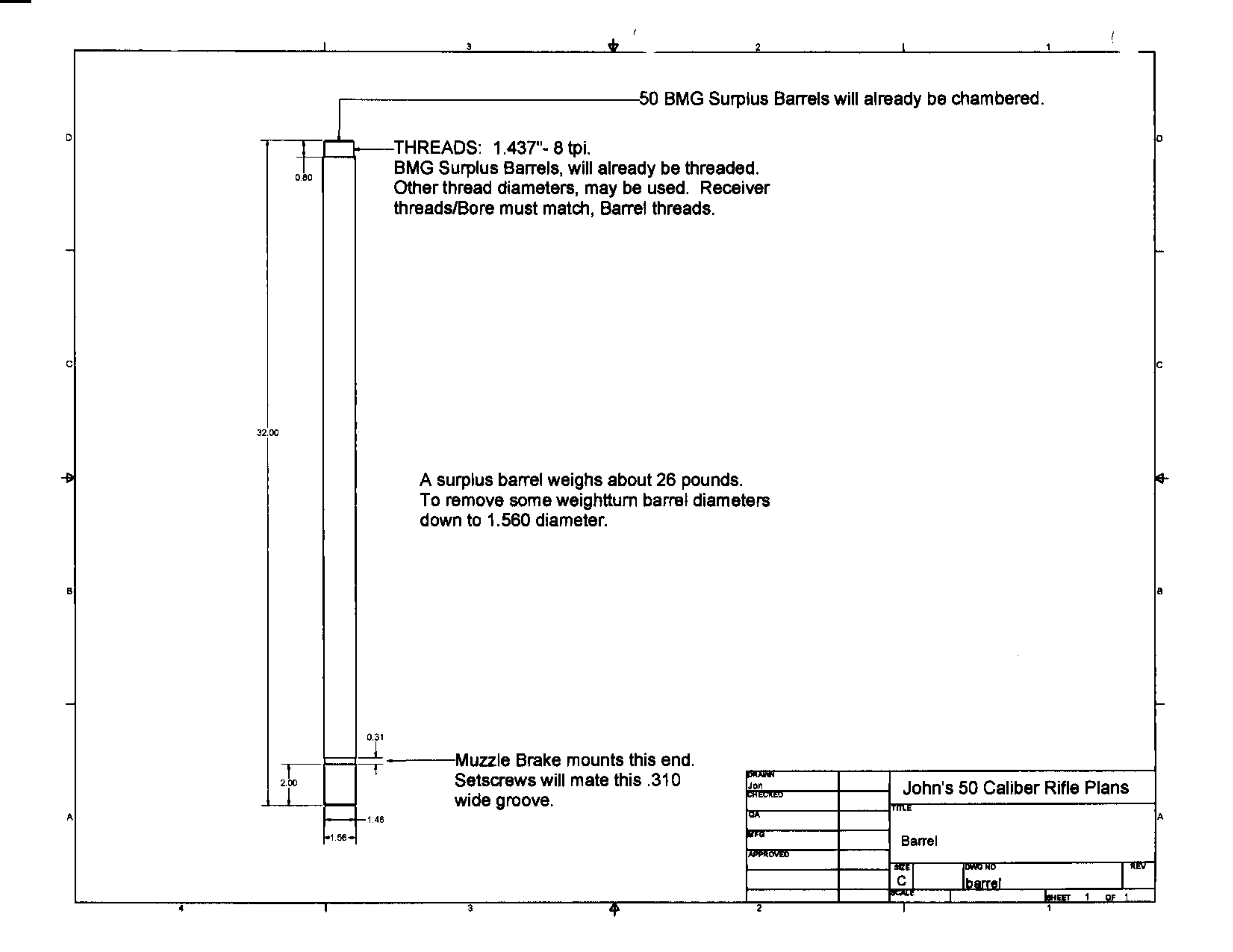
THE BARREL

The lenght of mine is 32". I suggest no shorter, the shorter it is the higher the pressure will get. It will come 45" oal. and 26 pounds. I turn all the o.d.s. off, and I measured 1.562" at barrel clamp area. The rest of the barrel, I turn down to 1.5" od. Using carbide endmill, mill 2 flats near reciever end not to deep, just touse wrench to tighten. Loc-tite-blue-on barrel threads.

The barrel lenght I used is 32".36" is the longest that you want to go. After 36" the barrel starts adding drag. Barrel clamp should be straight. It should also be tight to barrel od. I bored .002" to small, to insure a positive fit.

Muzzle brake should always be on rifle when shooting. This will reduce recoil. Also it will reduce stress to the recieyer. The muzzle brake has 3 setscrews that will lock down on the barrel 2.150" from end. I suggest that you cut a small groove around the od. of barrel, 2.150 from end, and <u>not</u> the thread end. Muzzle brake will go on, not thread end. Hope you already know this.

Aline muzzle brake horizontal straight and lock the (3) setscrews tight with loc-tite. Make sure .562 id hole in muzzle brake is in proper location. To check use .510" od wood dowel pin. The wood should not touch muzzle brake.


50 BMG Surplus Barrels will already be chambered.
THREADS: 1.437"- 8 tpi.
BMG Surplus Barrels, will already be threaded.
Other thread diameters, may be used. Receiver
threads/Bore must match, Barrel threads.
A surplus barrel weighs about 26 pounds.
To remove some weightturn barrel diameters
down to 1.560 diameter.
Muzzle Brake mounts this end.
Setscrews will mate this .310
wide groove.
0.80
32.00
0.31
2.00
1.46
1.56
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John's 50 Caliber Rifle Plans
TITLE
Barrel
SIZE
C
DWG NO
barrel
REV
SCALE
SHEET 1 OF 1

BUILDING MUZZLE BRAKE (M.B.)

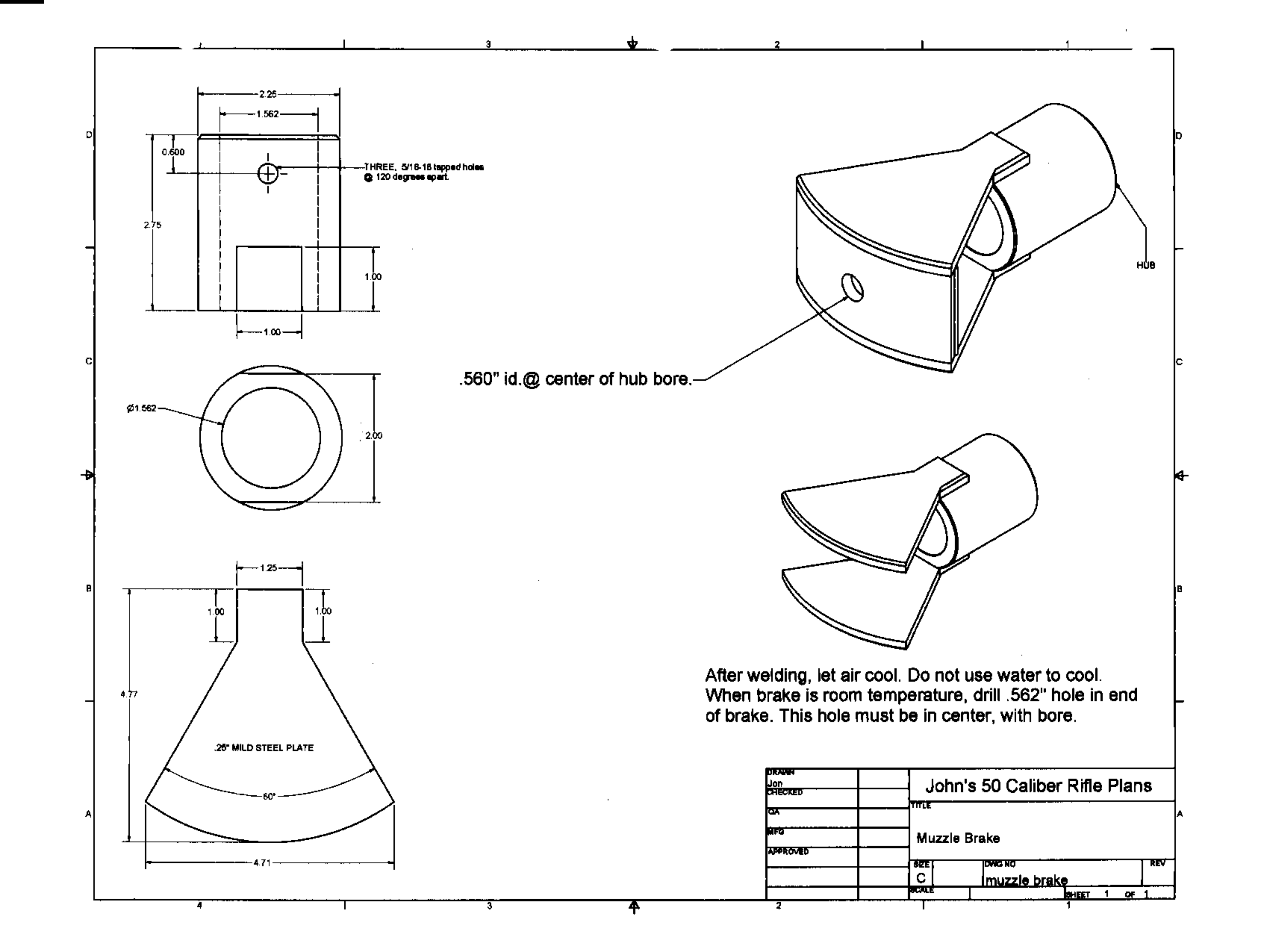
Bore out a piece of 2.25 diameter rod. I used some thick wall tubing, that was thick enough to obtain my dimensions. The M.B. bore should only be .002" difference, than the barrel diameter. I put the same dimension on drawings. I did this, to reduce mistakes, of builders.

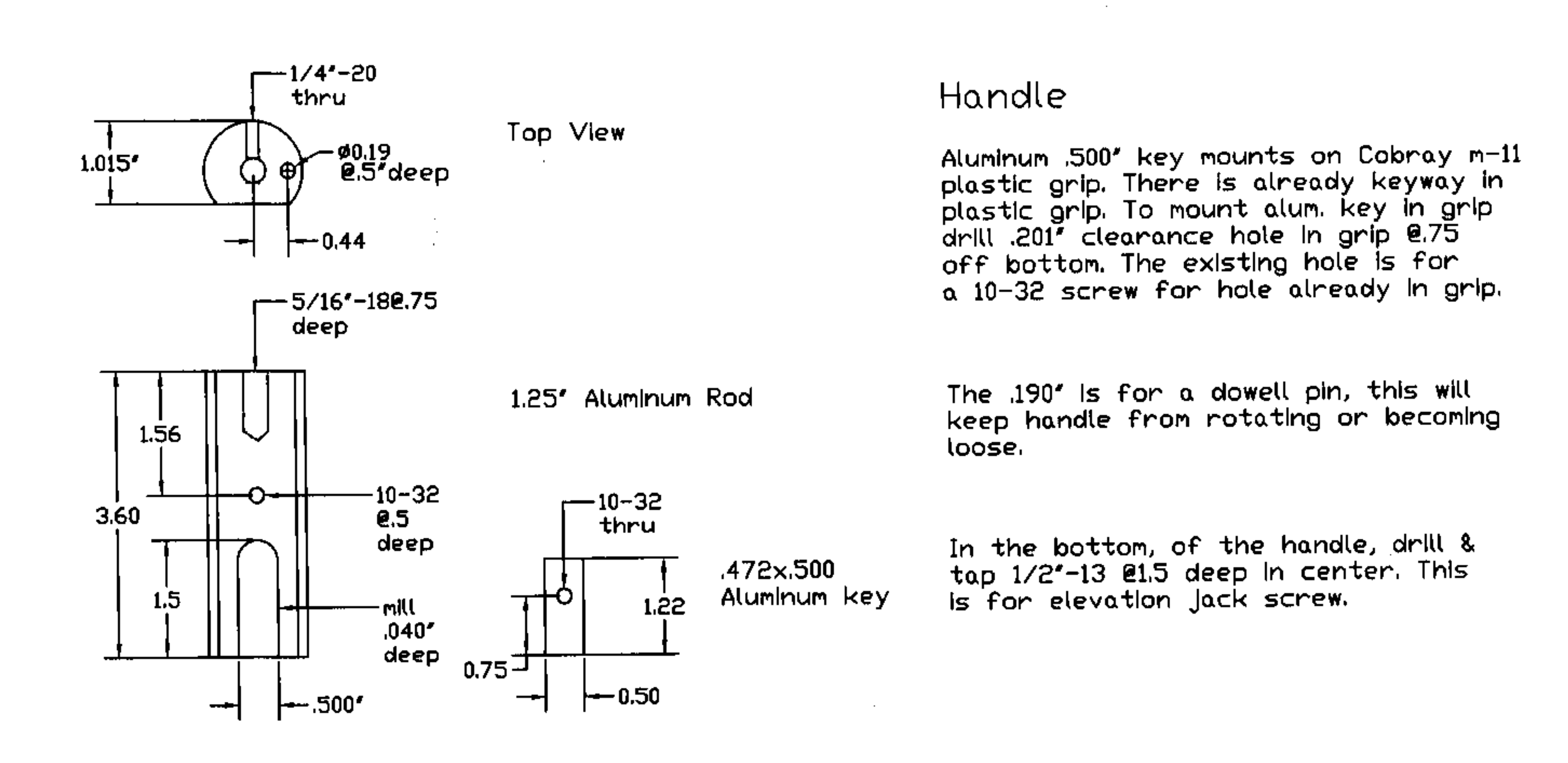
Once the rod has been bored, face to length, both ends. Drill 3 holes 5/16-18, 120 degrees apart. 5/16-18 setscrews will go here. They will lock muzzle brake to end of barrel. The setscrews will lock in the groove on barrel, The 1.462 o.d. groove.

Next mill two flats on 2.25 rod, .125" deep and 1.00" back 180 degrees apart. Between the two flats should measure 2.0 . This flat is very important. It will hold 1/4" x 4.0 x 4.5 plates (CRS) square, and will allow better welding. Dont make M.B. without milling flats.

The two 1/4" x 4.75' x 5." cold Roll steel plate can be cut on band saw, and belt sand to dimensions. Clean metal plates / rod clean before welding. Do all machine work before welding, except for bullet hole .562 ,. Tack weld parts in proper location first. After welding, let air cool, dont dip in water to cool, and dont drop. This could cause cracks to start.

After M.B. is cool, drill the .562" hole in proper location. A lathe or mill can be used. I used Lathe. If you use mill indicate a 1.562 od rod vertical in the mill vise, slide M.B. on vertical rod. Tighten setscrews lightly and evenly. Now you can drill on mill the .562 id hole. After drilling install on barrel and check for clearance of the .562 id hole.


2.25
1.562
0.600
THREE, 5/16-18 tapped holes
@ 120 degrees apart.
2.75
1.00
1.00
ø1.562
2.00
1.25
1.00
1.00
4.77
.25" MILD STEEL PLATE
60°
4.71
.560" id.@ center of hub bore.
HUB
After welding, let air cool. Do not use water to cool.
When brake is room temperature, drill .562" hole in end
of brake. This hole must be in center, with bore.
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TITLE
Muzzle Brake
SIZE
C
DWG NO
muzzle brake
REV
SCALE
SHEET 1 OF 1

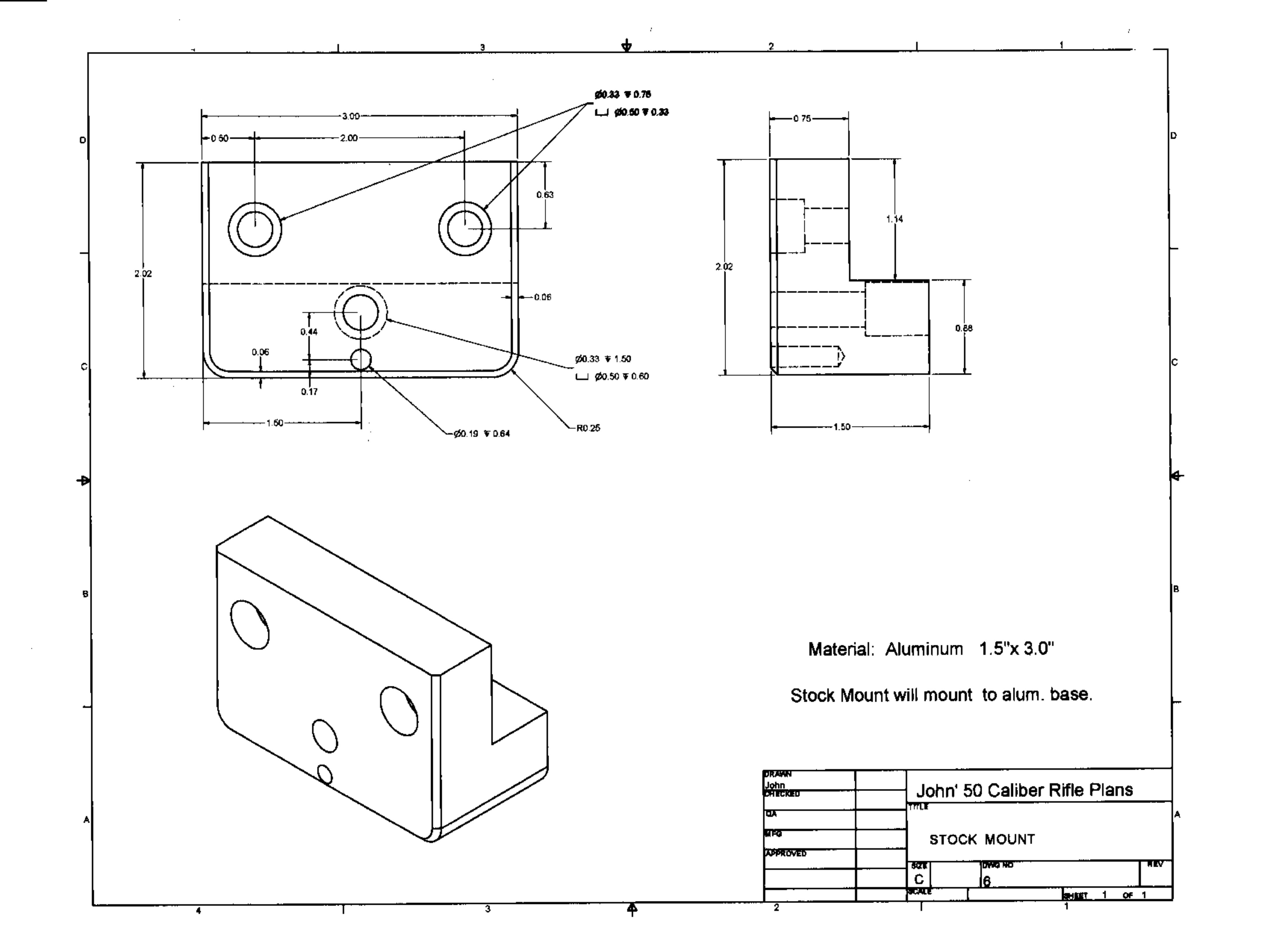


Handle

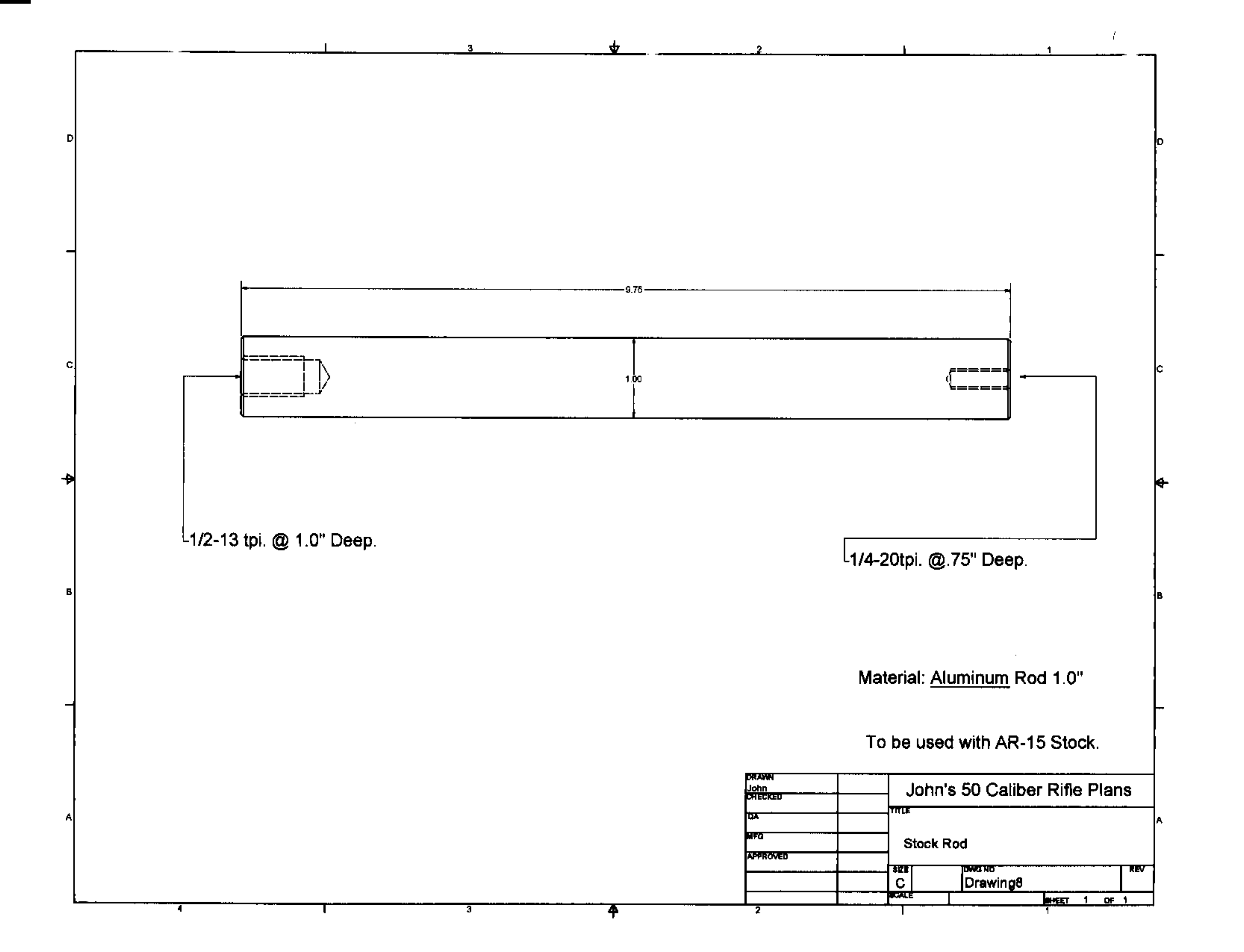
Aluminum .500" key mounts on Cobray m-11 plastic grip. There is already keyway in plastic grip. To mount alum. key in grip drill .201" clearance hole in grip @.75 off bottom. The existing hole is for a 10-32 screw for hole already in grip.

The .190" is for a dowell pin, this will keep handle from rotating or becoming loose.

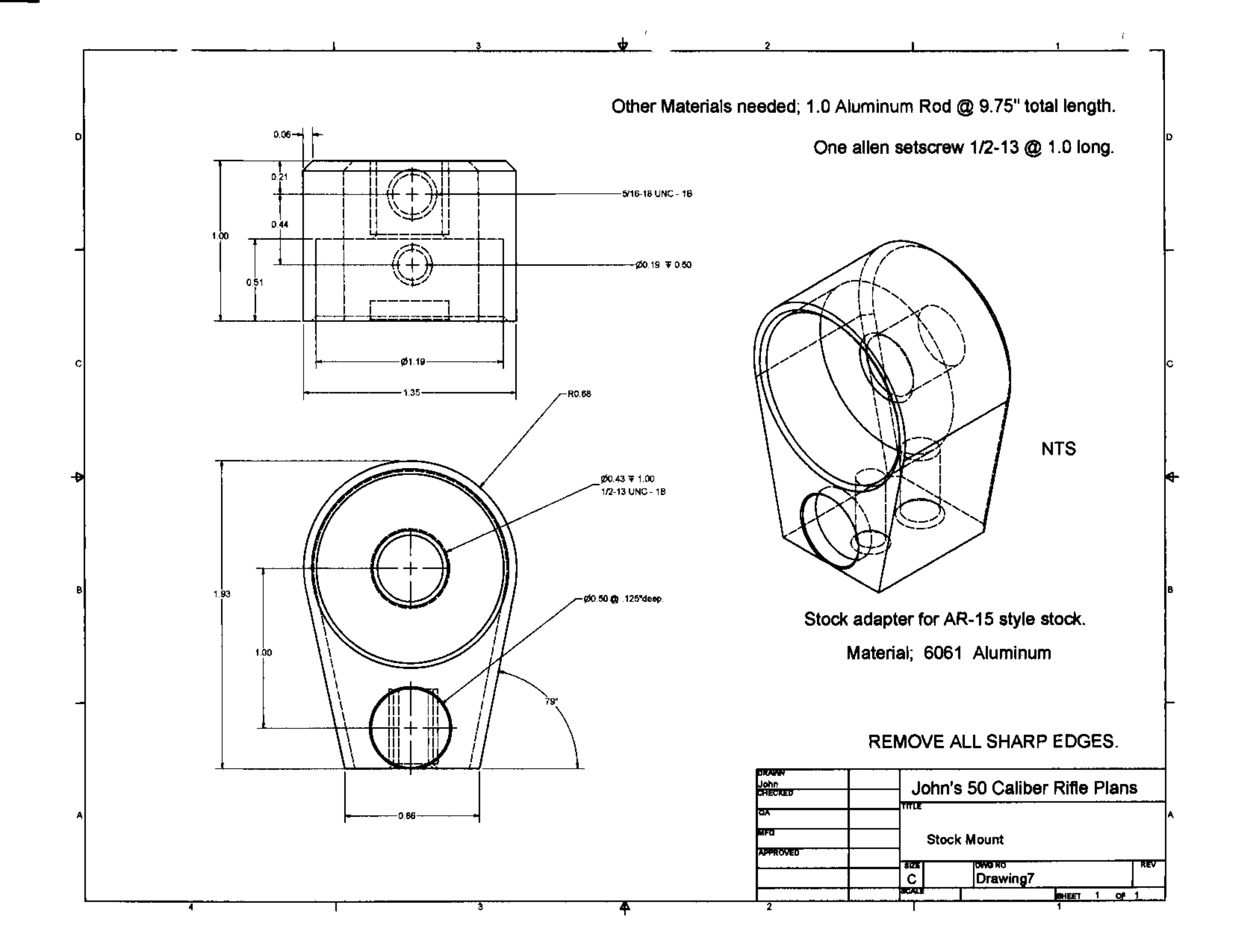
In the bottom, of the handle, drill & tap 1/2"-13 @1.5 deep in center. This is for elevation Jack screw.

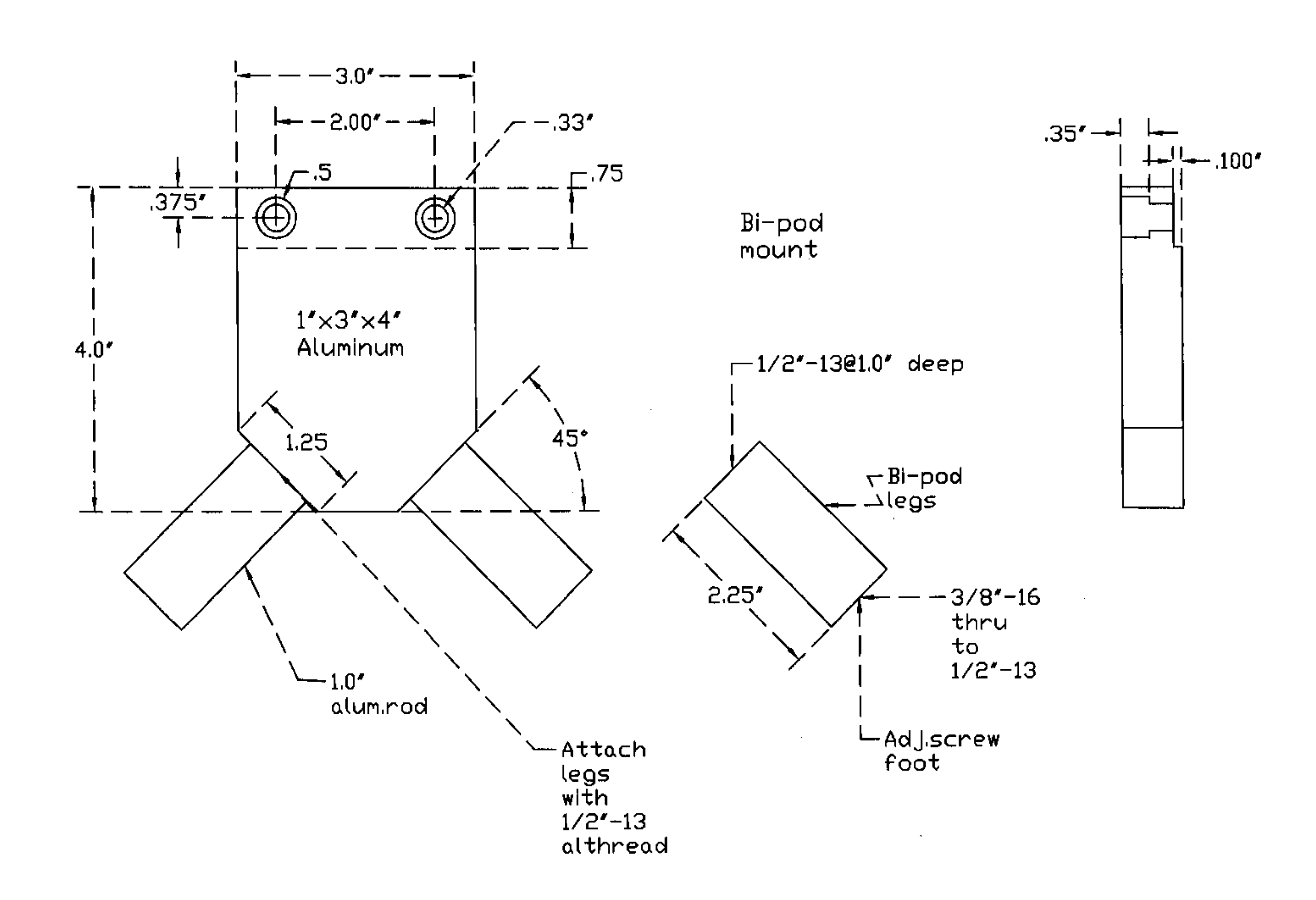


3.00
0.50
2.00
0.63
2.02
0.06
0.44
0.17
1.50
Ø0.33 ↧ 0.75
⌴ Ø0.50 ↧ 0.33
Ø0.33 ↧ 1.50
⌴ Ø0.50 ↧ 0.60
Ø0.19 ↧ 0.64
R0.25
0.75
1.14
0.88
Material: Aluminum 1.5"x 3.0"
Stock Mount will mount to alum. base.
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John' 50 Caliber Rifle Plans
TITLE
STOCK MOUNT
SIZE
C
DWG NO
6
REV
SCALE
SHEET 1 OF 1



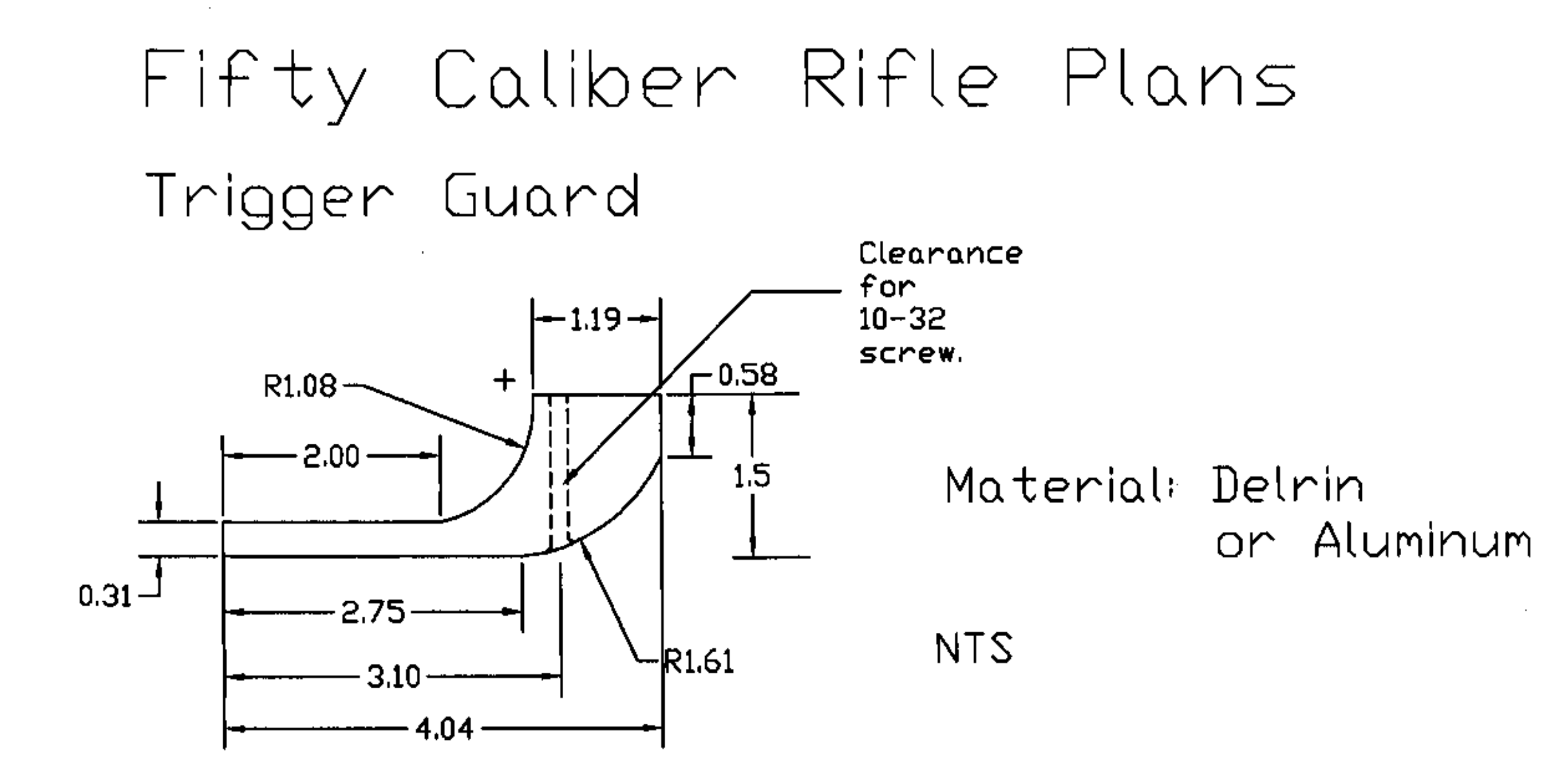
9.75
1.00
1/2-13 tpi. @ 1.0" Deep.
1/4-20tpi. @.75" Deep.
Material: Aluminum Rod 1.0"
To be used with AR-15 Stock.
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John's 50 Caliber Rifle Plans
TITLE
Stock Rod
SIZE
C
DWG NO
Drawing8
REV
SCALE
SHEET 1 OF 1


Other Materials needed; 1.0 Aluminum Rod @ 9.75" total length.
One allen setscrew 1/2-13 @ 1.0 long.
0.06
0.21
0.44
1.00
0.51
5/16-18 UNC - 1B
Ø0.19 ▽ 0.50
Ø1.19
1.35
R0.68
Ø0.43 ▽ 1.00
1/2-13 UNC - 1B
Ø0.50 @ .125"deep.
1.93
1.00
79°
0.66
NTS
Stock adapter for AR-15 style stock.
Material; 6061 Aluminum
REMOVE ALL SHARP EDGES.
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John's 50 Caliber Rifle Plans
TITLE
Stock Mount
SIZE
C
DWG NO
Drawing7
REV
SCALE
SHEET 1 OF 1


3.0″
2.00″
.33″
.5
.75
.375″
Bi-pod
mount
.35″
.100″
1″×3″×4″
Aluminum
4.0″
1.25
45°
1/2″-13@1.0″ deep
Bi-pod
legs
2.25″
3/8″-16
thru
to
1/2″-13
1.0″
alum.rod
Attach
legs
with
1/2″-13
althread
Adj.screw
foot

Fifty Caliber Rifle Plans

Trigger Guard



HEAD SPACING

To do, the falling block, barrel, and reciever will be used.
(FIRING)

With the reciever threaded, screw barrel in. Use falling block, without firing pin for safety. Screw in barrel until it is almost completely in. Now put live Round in chamber / barrel, slide in falling block. Bullet must measure 5.430.

I have got some a little smaller by .010". They will still work. As the falling block slides in, it will push Round in to its Final depth. The Radius on the front edge of the falling block will do this.

You want the falling block to be slightly resistance not so tight you have to force in. Try with a few more Rounds. I can push my falling block thru with my fingers, but it will not fall out on its own.

When test fire use 100 yards of fishing line. Remain 100 away. Shot one time and inspect everything screws, bolts for cracks, etc. You can set rifle on the ground, and have good back stop. Shoot again, inspect after every shot.

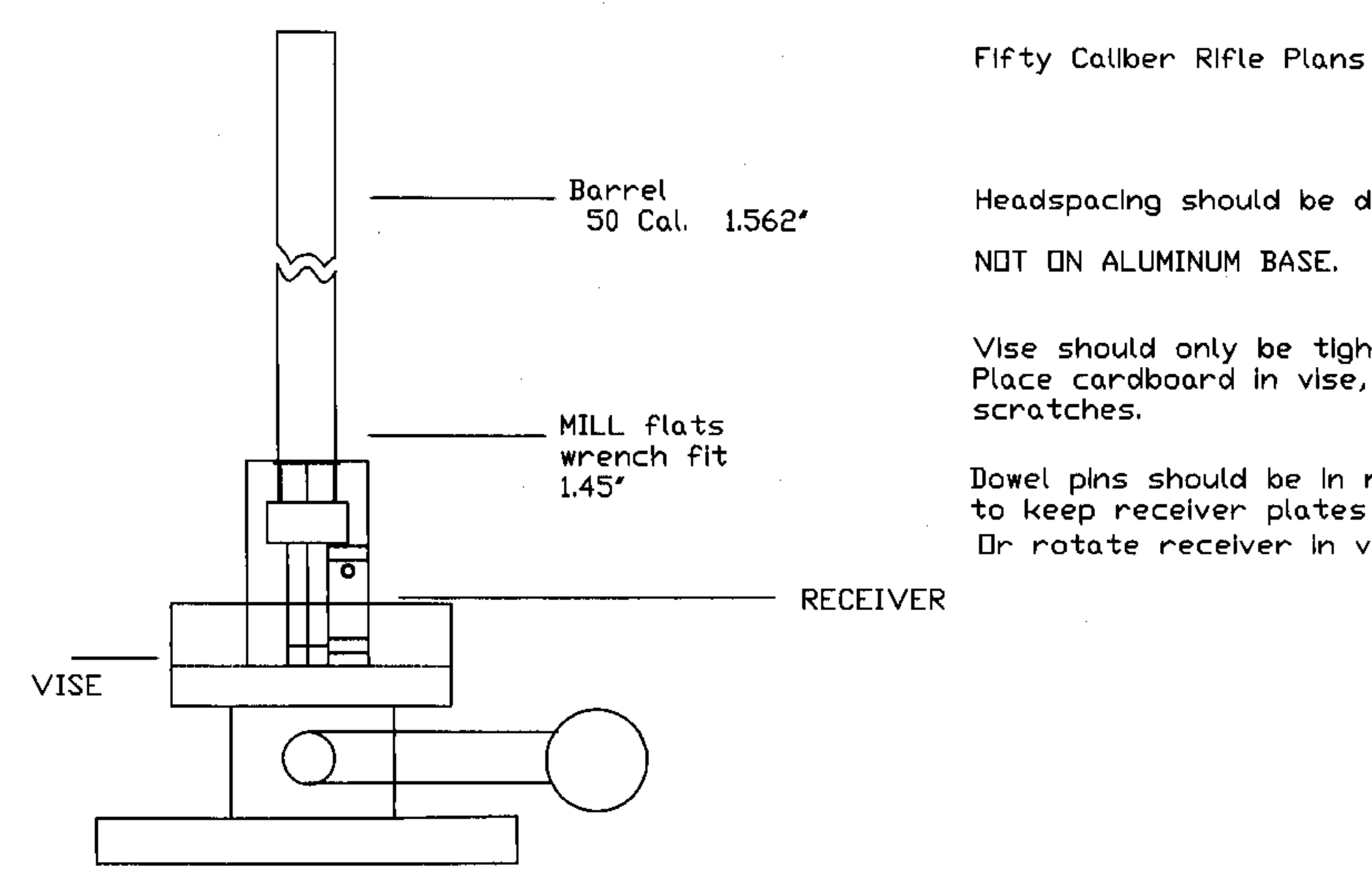
I have check mine, before and after each shot. After testing, when regular shooting I still will check before I shot. And wear ear protection always during testing and shooting of your fifty caliber, and I suggest to wear safety glasses.

After shooting,check for checks around the firing pin,slot in reciever. Cracks usually start in a corner, other than just on a flat surface. I would test with about 10 rounds and on 3 different days, dont paint until you are finish test firing. Paint may hide any cracks. I suggest you use check list, on index card, and dont have lots of people around. They may influence your judgement, but I would take someone.

Remember I just sold you the plans, I dont accept and personal OR property damage.

Make sure all the bolts are tight, dont over look checking any, like the bi-pod

On the firing block check it for cracks. Also, check spring and firing pin. Its hammer stop tight. Does firing pin floats freely.



Fifty Caliber Rifle Plans

Headspacing should be done in vise.

NOT ON ALUMINUM BASE.

Vise should only be tighten slightly. Place cardboard in vise, to reduce scratches.

Dowel pins should be in receiver to keep receiver plates inline.
Or rotate receiver in vise 90 deg.

ASSEMBLY

Receiver:

Insert hammer and spring in the reciever and push in the hammer shaft.

Fasten the hammer knob and brass spacer on next, and lock the set screws tight, with removable lock tite. On the opposite end of the shaft install nylon or brass washer and loc-collar. This shaft now should not come out of reciever.

Install Bipod on base and handle. They will keep the base up and steady, so parts can be add easier. Now install the trigger and spacers in base and add the 3-48 allen screw in trigger shaft.

* Screw the barrel into the reciever, attach it to the base. Install trigger spring. Fasten the allen bolts tight with removable loc-tite. Make sure the reciever is straight.

Next, install the barrel clamp with removable loc-tite to base. Clamp must be tight on the barrel od.

Try cocking hammer with rifle unloaded of coarse. I suggest not to dry fire, just hold hammer, and see if it releases proper. Dry firing will cause setscrew in hammer to release. If they slip when cocking the rifle could fire, so make sure its no play here between the hammer and shaft. Try trigger, several times and make adjustments. You may have to rotate trigger shaft to get proper alinement. Be sure lock tite the 5/16-18 setscrews in base, that locks in trigger shaft.

If you have questions, please contact me via e-mail.

John's 50 Caliber
Rifle Plans
www.fiftycaliber.com

Material List (50 caliber rifle)

3/4 x3" x20.38 inches aluminum plate 6061-t6 base/rail
1.5" [redacted]x3" x10.3" (mill two pcs. From this 5.00 long) receiver
1" od. Aluminum rod 16 " long bi-pod legs & stock rod
1/4 od.9 " long hammer pivot shaft and trigger shaft
1.25 od aluminum rod 4.0 long handle
1.75 sq.x3.0x 2 pc.s barrel clamp
1x2x3 mild steel cold finish falling block
1/2 x1.0x 1.38 aluminum flat lever for hammer shaft
.25 x 4 x 10 flat mild steel cold finish muzzle brake
2.25 o.d.x 2.75 long rod mild steel cold finish muzzle brake
.25 x.5 x 2.0 flat mild or stainless hammer stop

Purchased Parts

Ak-47 hammer,spring & trigger (get cheap hammer,not American made)
American hammers are too hard. Cant drill for set screws
Ar-15 firing pin & stock assembly
1 lock collar may want to use 2 collars are .5 o.d. x.25 .id. x.28 thick
with 10-32 tap hole thru side. These can be made.
3 bronze or oil-lite bushing for hammer shaft .375 o.d.x.25 i.d.x.25 or .38 thick
Allen screws and bolts to assemble, the list will follow on another page.

Suppliers

Tnw inc. Vernoia ,Oregon 1-503-429-5001 Web ://members.aol.com/tnwcorp
Miscproducts.html barrels and ammo

Classic Arms inc. Indian trail ,NC. 1-800-383-8011 Ak-47 parts

Ivanhoes Warehouse oulet 1-508-667-5181 www.ivanhoeoutlet.com Ak-47 parts

Fulton Armory 1800-878-9485 ar-15 parts

Oyster Bay N.Y. 1-516-922-1376 may get more barrels

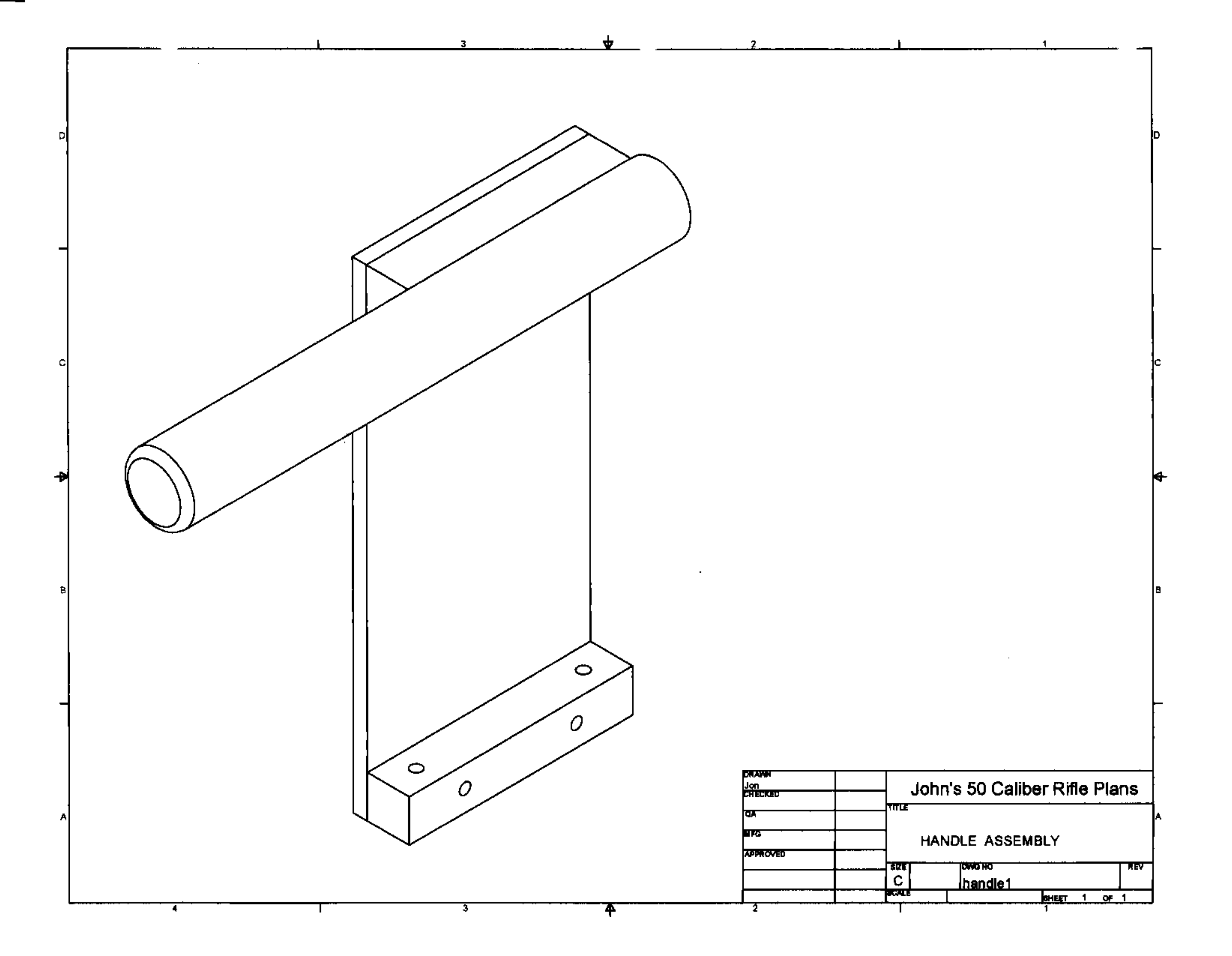
Ammo

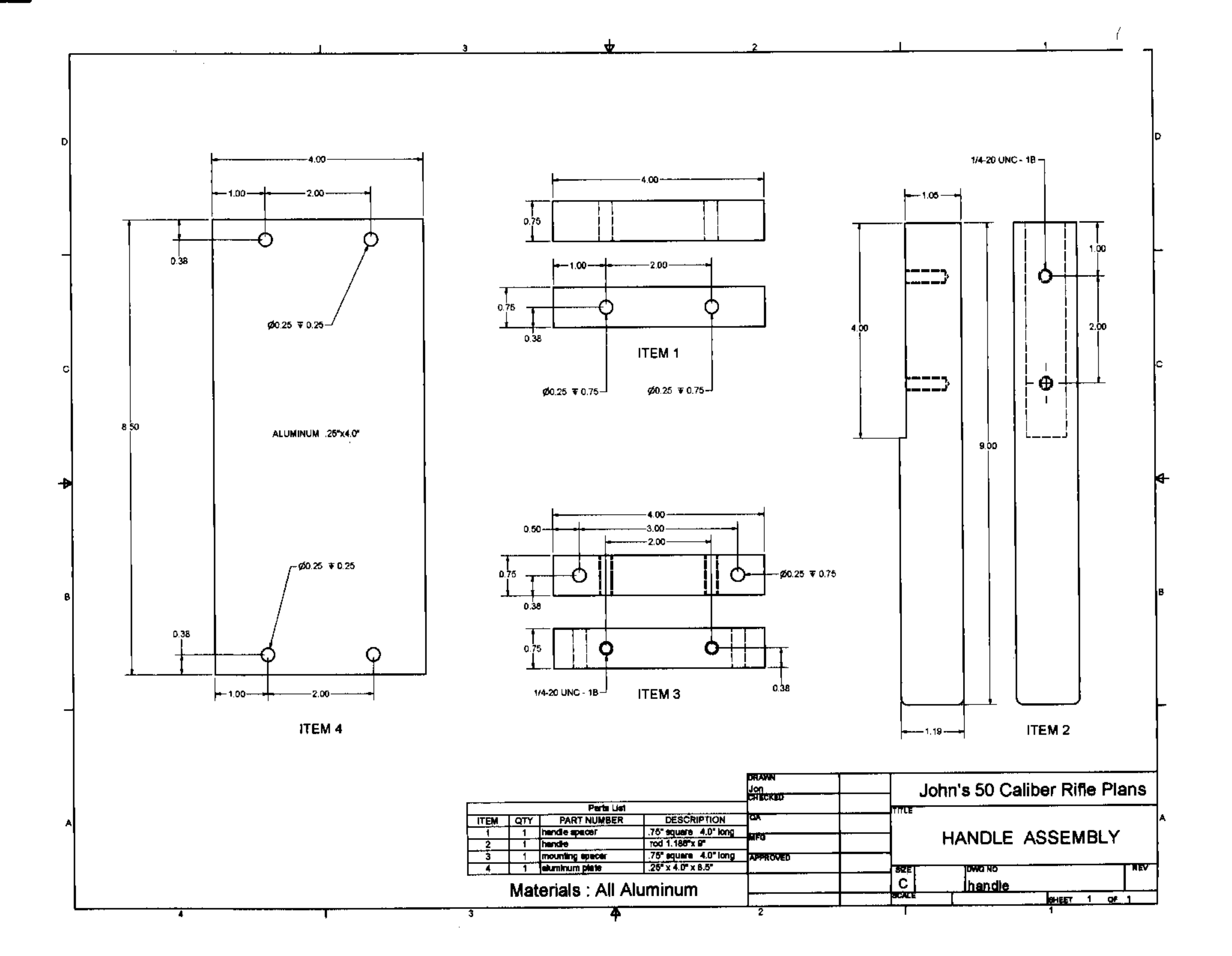
AAA www.aaa-ammo.com 402-334-3389

Thunderbird Cartridge Co. www.qpg.com/t/tcci. 1-800-535-ammo

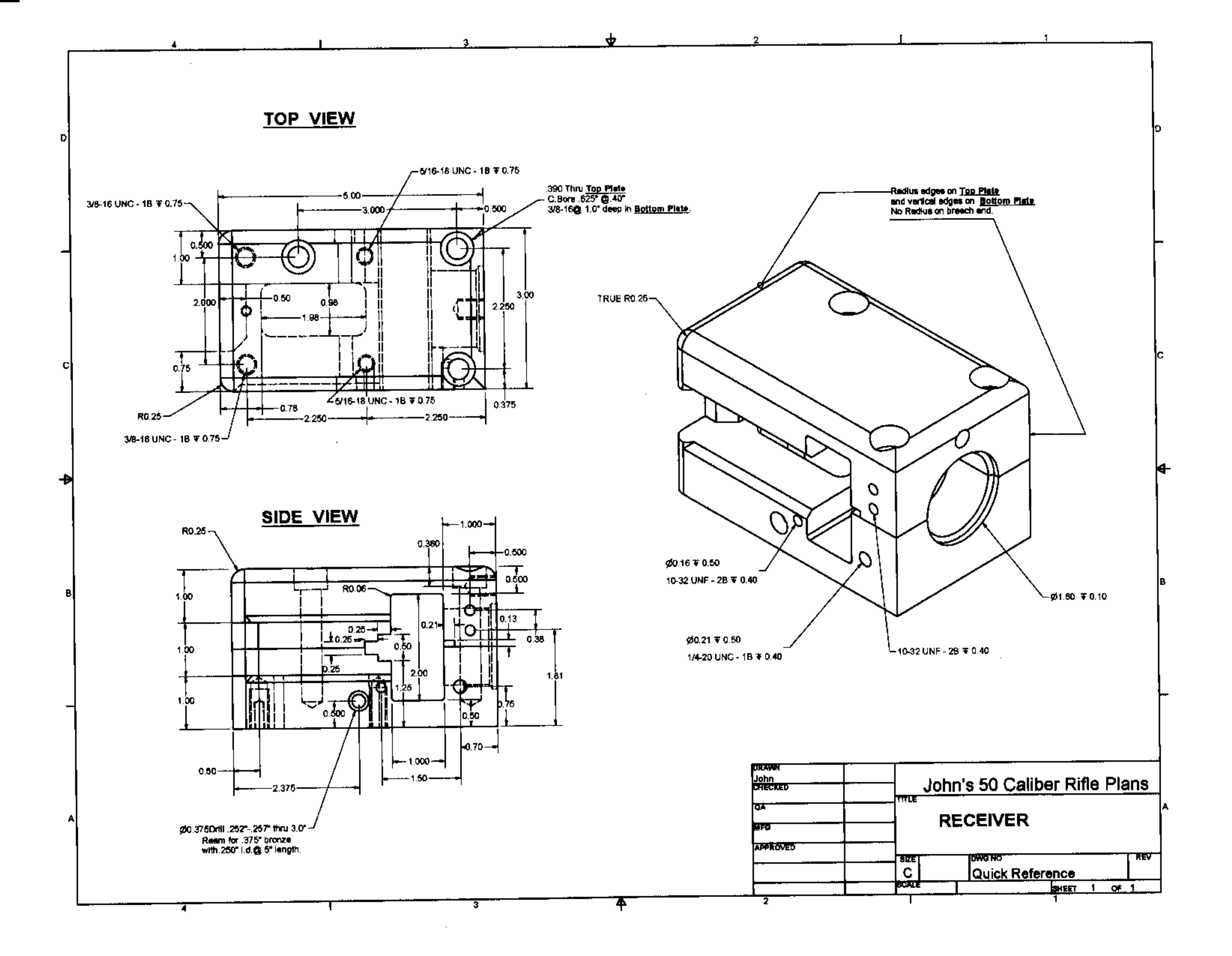
BOLT LIST; FIFTY CALIBER RIFLE PLANS

Bolt Type :	Size :	Qty :	For :
Allen	.375 x 1.0	2	Receiver
	.375 x 1.75	3	
	.312 x 1.0	2	
Allen	.375 x 1.0	2	Barrel Clamp
	.312 x .875	4	
Allen	.312 x 1.0	2	Bi-pod
	.375 x 2.0	2	Bi-pod Leg
Allen	.312 x 1.0	2	Stock Mount
Flathead Scre	10/32 x .5	2	Firing Block
Setscrews	8/32 x 3/8	2	Hammer Knob
	8/32 x 1/2	1	Retain Trigger Spr.
	10/32 x 1/4	1	Hammer
	10/32 x 3/8	1	Hammer
	5/16-18 x 3/8	2	Retain Trigger Shft
(or althread)	1/2-13 x 1.0	3	Stock & Bi-pod
Brass Nut	1/4-20	2	Spacers
Allen Screw	3-48 x .25 long	1	Trigger Shaft
Dowel Pins	.25 x 1.0	2	Reveiver
	.187 x 1.0	1	Stock & Handle


John's 50 Caliber Rifle Plans
TITLE
HANDLE ASSEMBLY
DRAWN
Jon
CHECKED
QA
MFG
APPROVED
SIZE
C
DWG NO
handle1
REV
SCALE
SHEET 1 OF 1



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	handle spacer	.75" square 4.0" long
2	1	handle	rod 1.188"x 9"
3	1	mounting spacer	.75" square 4.0" long
4	1	aluminum plate	.25" x 4.0" x 8.5"



TOP VIEW
3/8-16 UNC - 1B ▼ 0.75
5/16-18 UNC - 1B ▼ 0.75
.390 Thru Top Plate
C.Bore .625" @ .40"
3/8-16@ 1.0" deep in Bottom Plate.
5.00
3.000
0.500
1.00
2.000
0.75
0.50
0.98
1.98
2.250
3.00
0.375
R0.25
0.78
2.250
2.250
5/16-18 UNC - 1B ▼ 0.75
3/8-16 UNC - 1B ▼ 0.75
SIDE VIEW
R0.25
R0.06
1.000
0.360
0.500
0.500
0.13
0.38
1.81
0.21
0.25
0.25
0.50
0.25
2.00
1.25
0.500
0.50
0.75
0.70
1.000
1.50
1.00
1.00
1.00
0.50
2.375
Ø0.375Drill .252"-.257" thru 3.0"
Ream for .375" bronze
with.250" I.d.@ 5" length.
Radius edges on Top Plate
and vertical edges on Bottom Plate
No Radius on breech end.
TRUE R0.25
Ø0.16 ▼ 0.50
10-32 UNF - 2B ▼ 0.40
Ø0.21 ▼ 0.50
1/4-20 UNC - 1B ▼ 0.40
10-32 UNF - 2B ▼ 0.40
Ø1.80 ▼ 0.10
DRAWN
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MFG
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John's 50 Caliber Rifle Plans
TITLE
RECEIVER
SIZE
C
DWG NO
Quick Reference
REV
SCALE
SHEET 1 OF 1